

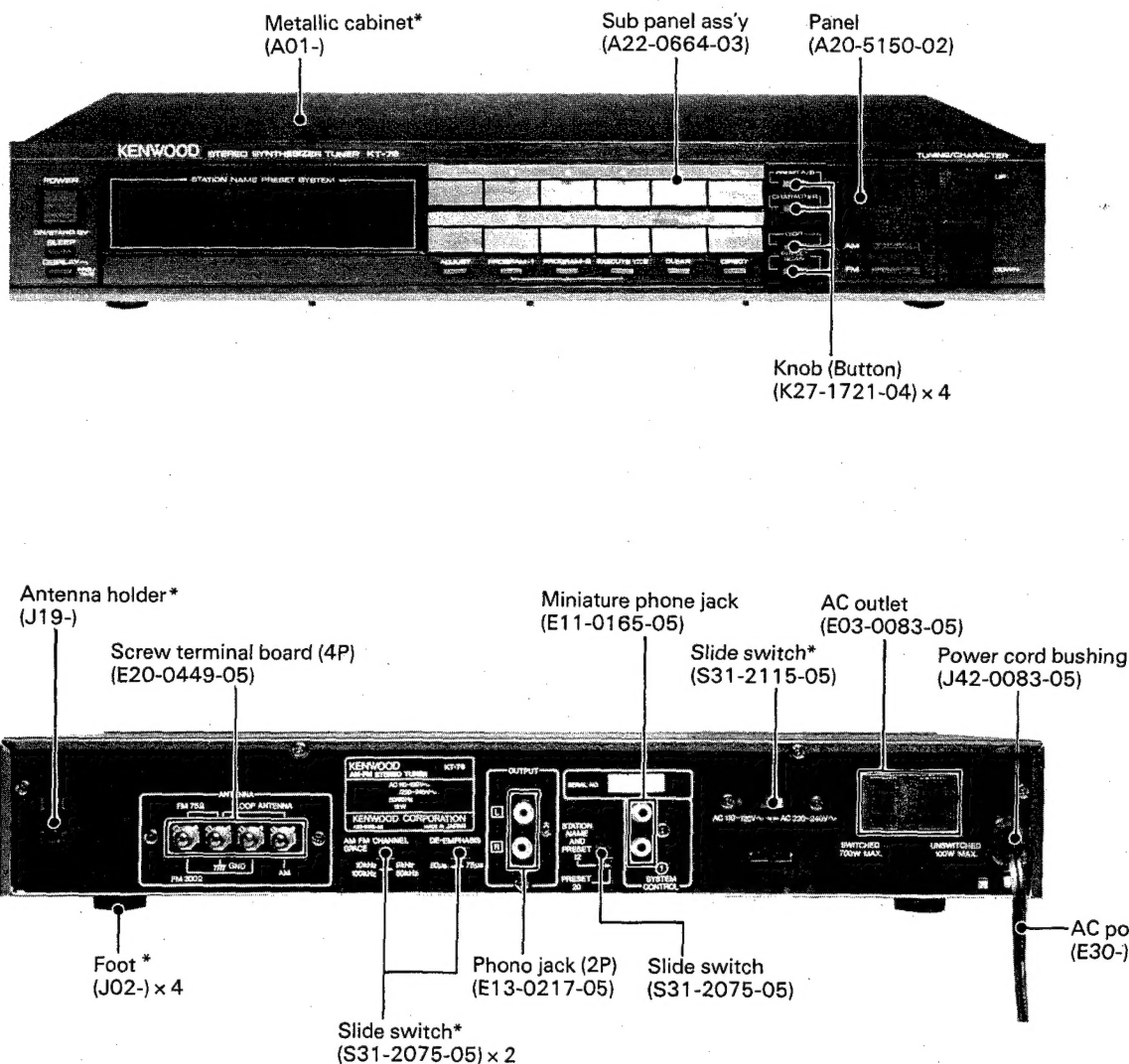
STEREO SYNTHESIZER TUNER

# KT-76

## SERVICE MANUAL

# KENWOOD

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\*Refer to parts list on page 28.

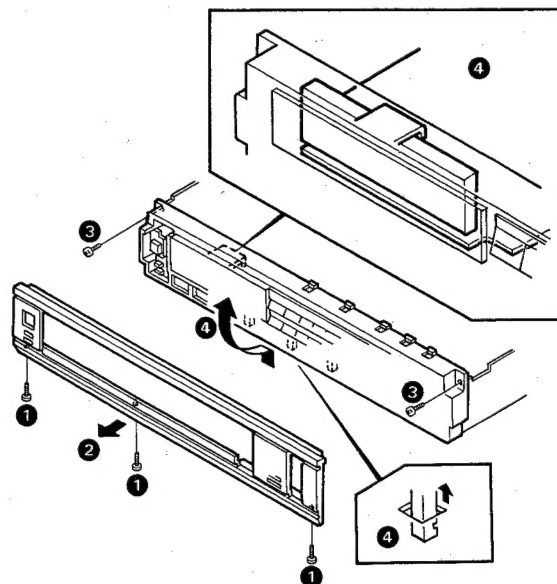
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## DISASSEMBLY FOR REPAIR

### Removing the front panel and sub panel

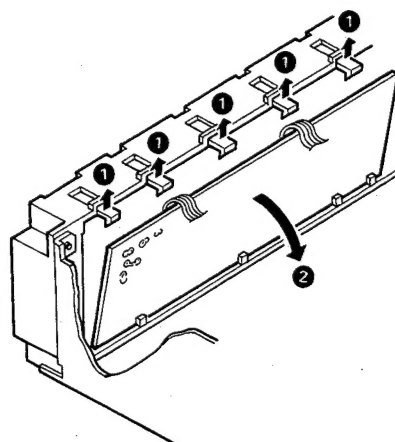
1. Remove the 3 screws fixing the front panel to the sub panel (1).
2. Remove the front panel in the direction of the arrow (2).
3. Remove the 2 screws fixing the sub panel to the chassis (3).
4. Slightly raise the sub panel to disengage bottom 3 claws. Carefully raise the sub panel in the direction of the arrow (4) to remove it while paying attention to the fluorescent tube display retaining section.



### Removing the Tuner Unit (X05-3290-10) (B/4)

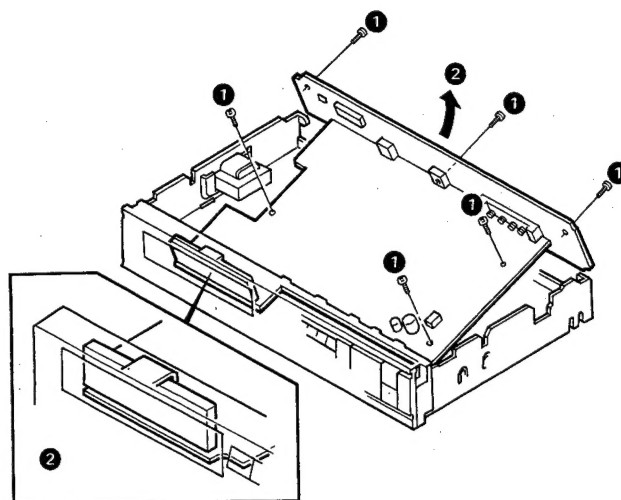
(This procedure can be carried out without removing the front panel.)

1. Disengage the 5 claws fixing the Tuner Unit (X05-) (B/4) (1).
2. Remove the Tuner Unit (X05-) (B/4) in the direction of the arrow (2).

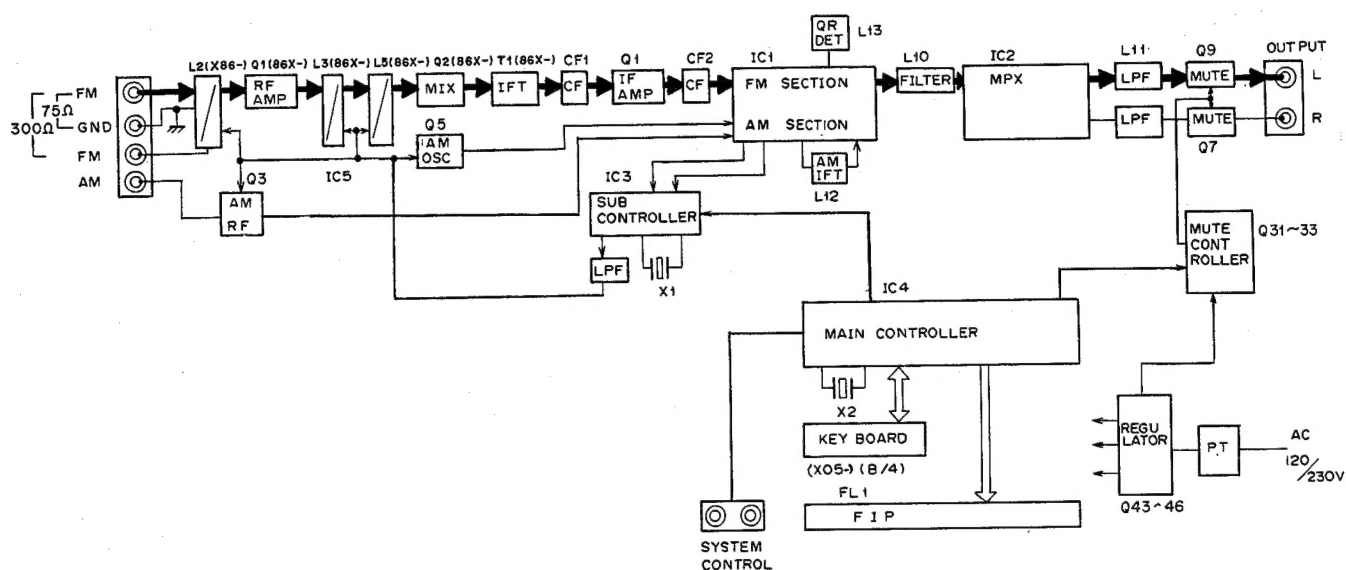


## Removing the Tuner Unit (X05-3290-10) (A/4)

1. Remove the metallic cabinet before this operation.
2. Remove the 3 screws fixing the rear panel to the chassis, and remove the 3 screws fixing the Tuner Unit (X05-) (A/4) to the chassis (1).
3. Remove the Tuner Unit (X05-) (A/4) together with the rear panel in the direction of the arrow (2).



## BLOCK DIAGRAM



## CIRCUIT DESCRIPTION

### Function of components

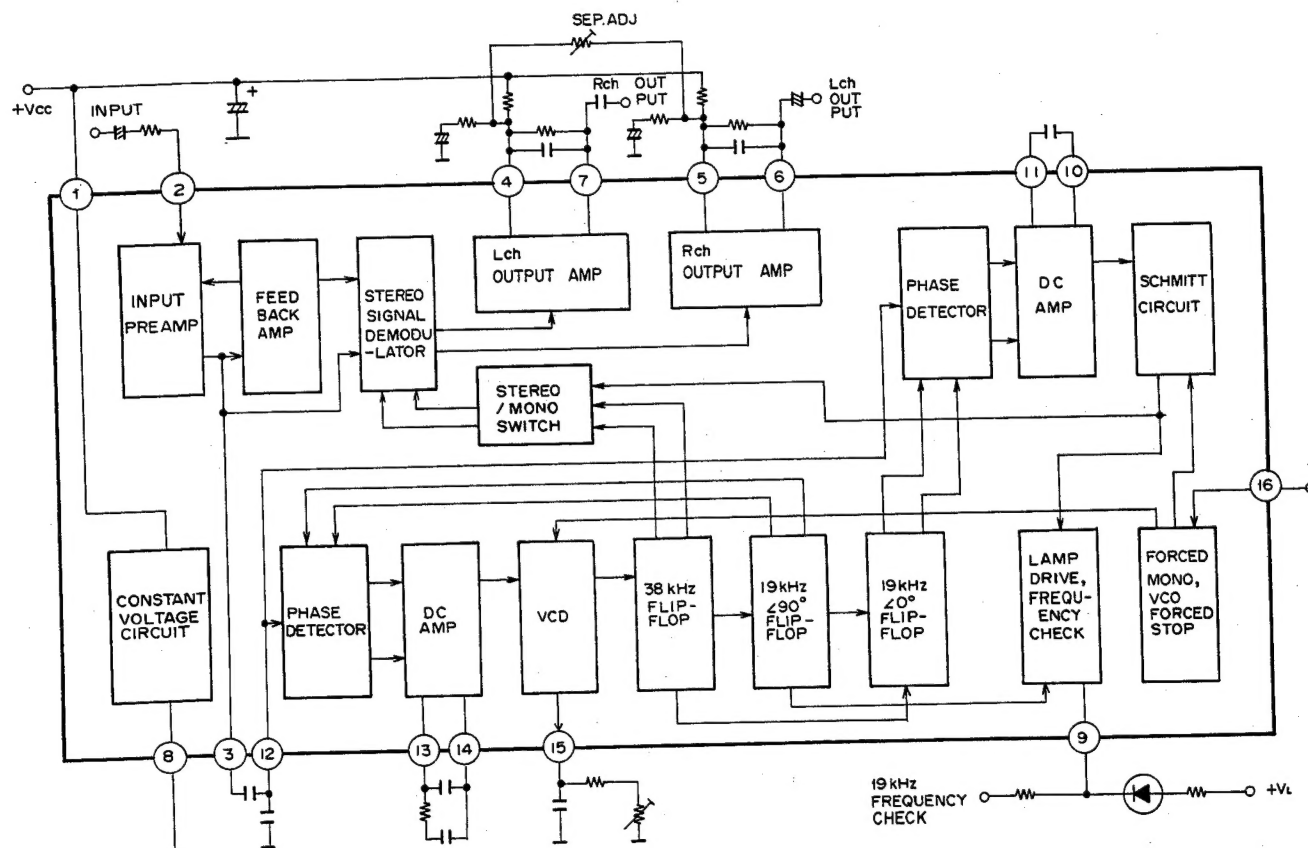
Tuner unit (X05-3290-10 or X05-3340-10)

Components	Use/Function	Operation/Condition/Interchangeability
Q1	FM IF amp	10.7 MHz amplifier.
Q2, 3	AM RF switch	LW/MW RF electronic switching.
Q4, 5	AM OSC switch	LW/MW OSC electronic switching.
Q7	Buffer	Impedance switching.
Q8, 9	Muting switch	Muting during function switching.
Q10	L.P.F. switch	Time constant switching in LW reception.
Q11, 12	L.P.F.	PLL low-pass filter.
Q13	L.P.F. control	Q10 control. LW position when switched ON.
Q14	Inverter amp	Auto stop control.
Q15, 16	Tuner band switch	FM/AM mode switching.
Q19	AM/FM switch	IC1 mode switching. AM position when switched OFF.
Q31, 32	Muting control	Operates during function switching.
Q33	Muting driver	Operates during function switching.
Q34	Power driver	+12V power supply ON and OFF.
Q35	Inverter amp	Reset control.
Q36	FIP driver	FIP display.
Q37	FIP control	Supplies +5V to Q39 and Q40 when power is turned ON.
Q38	Q36 control	Q36 control with the signal from microcomputer.
Q39	FIP driver	TUNED display.
Q40		STEREO display.
Q41	Preset switch	20-channel preset, 12-channel preset and station name switching.
Q42	Channel switch	FM-AM channel space switching, or LW channel switching.
Q43	Power control	Power ON/OFF control.
Q44	Constant voltage	Stabilization of +12V power.
Q45	Muting control	Muting control when turning power OFF.
Q46	Constant voltage	Stabilization of +5V power, CE control.
IC1	FM/AM system IC	FM IF amplification, detection control. AM MIX, IF amplification, detection control.
IC2	MPX IC	MPX demodulation.
IC3	PLL IC	PLL for electronic tuning.
IC4	Microcomputer	System control.



## IC2: AN7470

### Equivalent block diagram

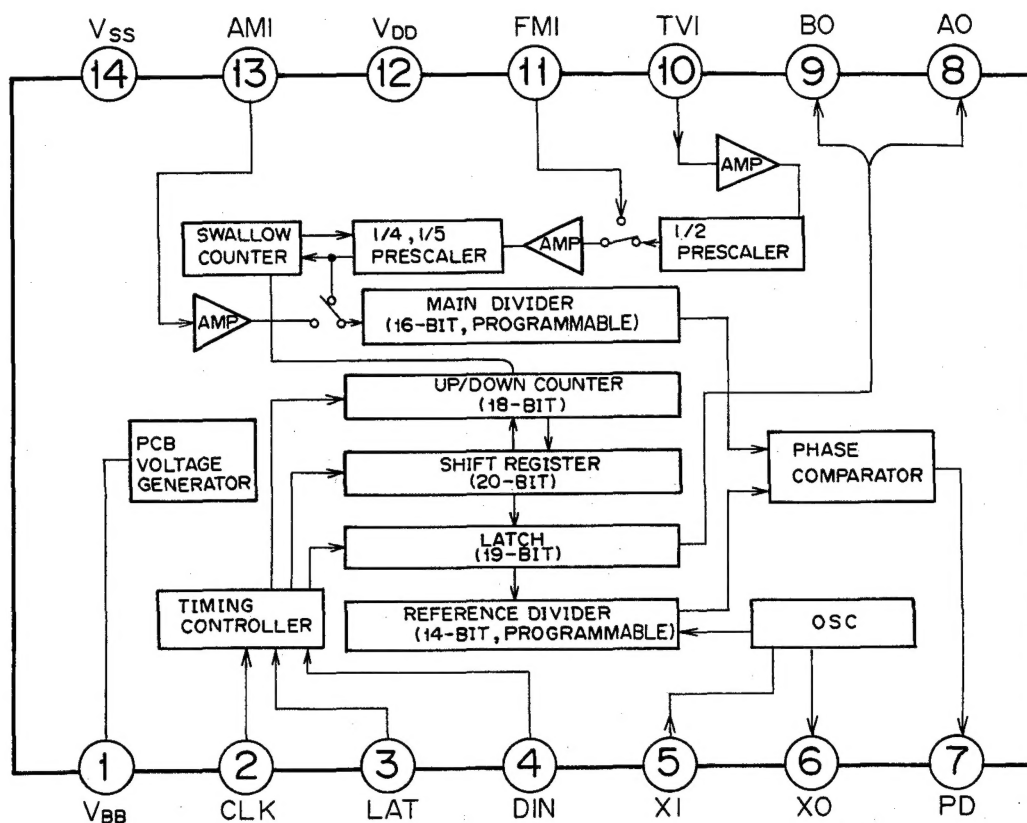


### Terminal connection and functions

Terminal No.	Connection/Function
1	Supply voltage (+Vcc)
2	Stereo composite signal, input terminal
3	Input preamp, output terminal
4	L CH output amp, feedback terminal
5	R CH output amp, feedback terminal
6	R CH output amp, output terminal
7	L CH output amp, output terminal
8	Grounding terminal
9	Stereo display lamp drive and 19 kHz frequency check terminal
10	Stereo signal detector circuit, low-pass filter terminal
11	Stereo signal detector circuit, low-pass filter terminal
12	PLL circuit, input terminal
13	PLL circuit, low-pass filter terminal
14	PLL circuit, low-pass filter terminal
15	VCO freerun oscillation frequency adjustment terminal
16	Forced mono/forced VCO oscillation stop terminal

## IC3: CX7925B

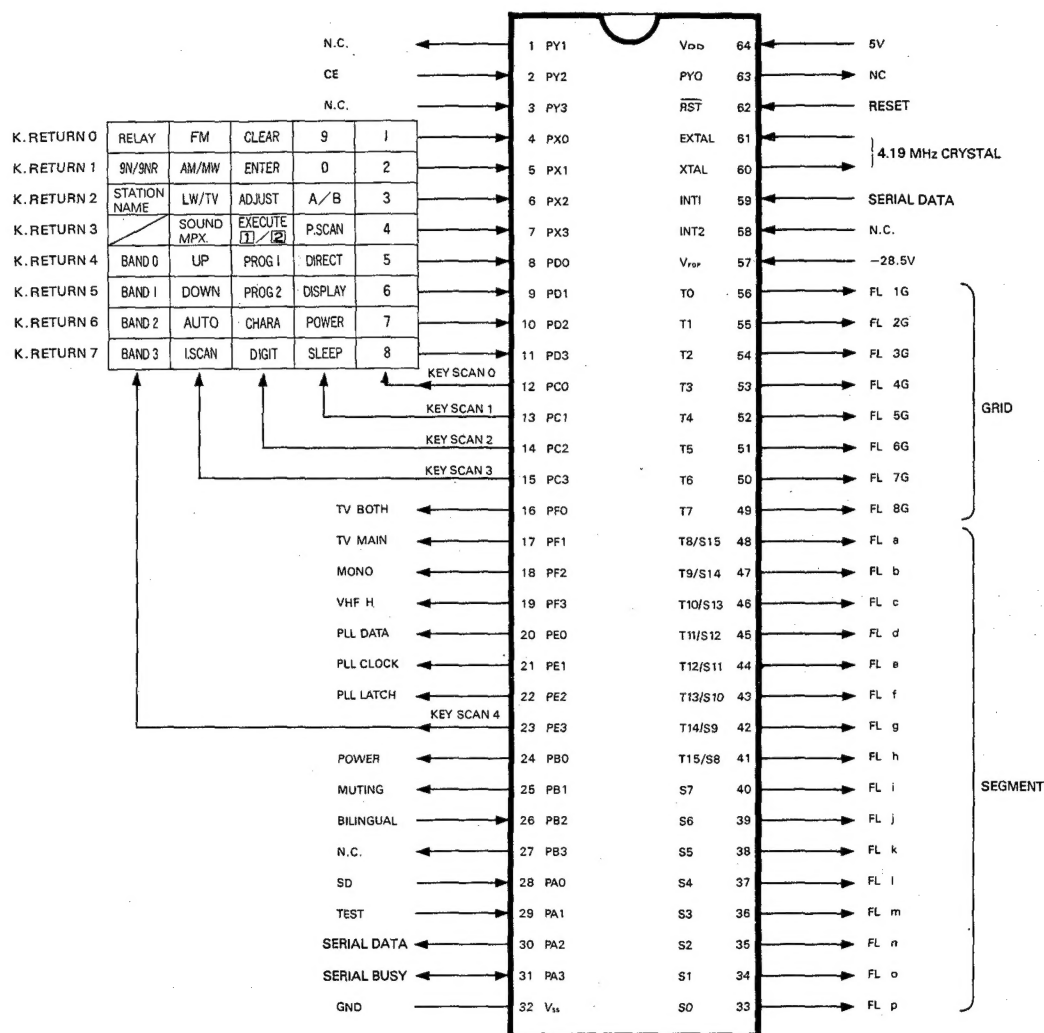
### Block diagram and terminal configuration diagram



### Terminal description

Terminal No.	Symbol	Terminal Description
1	VBB	PCB terminal (Connect a 0.01 $\mu$ F capacitor between the GND).
2	CLK	Input terminal for the clock used for 20-bit serial data input (Shifted at the rise).
3	LAT	Input terminal for the shift register input data latch signal (shifted at the rise) and, at the same time, for the Up/Down clock (status changed at the rise).
4	DIN	Data input terminal, also the Up/Down mode switching terminal (Up mode with "H" level, Down mode with "L" level).
5	XI	Connection terminals for the reference signal generator X'tal oscillator. (Max. 13 MHz, standard 4.0 MHz)
6	XO	
7	PD	Phase comparator output terminal (3-state).
8	AO	External control signal output terminal/Unlock signal output terminal (E/E MOS push-pull).
9	BO	External control signal output terminal/data check terminal (E/E MOS push-pull).
10	TVI	High-frequency signal input terminal (300 MHz or 350 MHz max.). With 1/2 prescaler.
11	FMI	High-frequency signal input terminal (150 MHz or 180 MHz max.).
12	VDD	Power supply (+5V).
13	AMI	High-frequency signal input terminal (40 MHz or 50 MHz max.).
14	Vss	Grounding terminal.

## IC4: CXP5016-196S Key matrix connection



## Functions of diodes and switches

(0: Without diode, 1: With diode)

Destination Type	Set Switches				Band	Receiving Frequency Range	Inter-Channel Space	Intermediate Frequency	PLL Reference Frequency	PLL Input Terminal	Auto Tuning
	B3	B2	B1	B0							
K	1	0	0	0	FM	87.5 MHz ~ 108.0 MHz	100 kHz	+10.7 MHz	50 kHz	FMI	○
					AM	530 kHz ~ 1610 kHz	10 kHz	+450 kHz	10 kHz	AMI	○
E1	1	*1	0	0	FM	87.5 MHz ~ 108.0 MHz	50 kHz	+10.7 MHz	50 kHz	FMI	○
					AM	531 kHz ~ 1602 kHz	9 kHz	+450 kHz	9 kHz	AMI	○

\* The KT-76 Types M, U and UE are modified into Types E or K by switching the inter-channel space with the CHANNEL SPACE SW (S31) on the rear panel and by adding a diode (ISS133) for BAND 2.

Before switching, turn the AC off (by pulling out the power plug), switch the switch, and turn AC on again.

If the AC power is left ON, switching the switch does not change the destination.

## 9N/9N+2

This switch (S31) is used to select the stopping frequencies in the LW auto tuning. The switch is valid only with the KT-550L Types T and E.

The LW band frequencies are scanned up/down by stopping at 1 kHz intervals in both manual tuning and auto tuning. However, in auto tuning only, this switch allows to set the stopping frequencies as shown below (as long as there are tuned-in stations at these frequencies). This switch is switchable at any time.

9N/9N+2	Stopping Frequencies
0	153, 162, 171, 180, .....270, 279 kHz
1	155, 164, 173, 182, .....272, 281 kHz

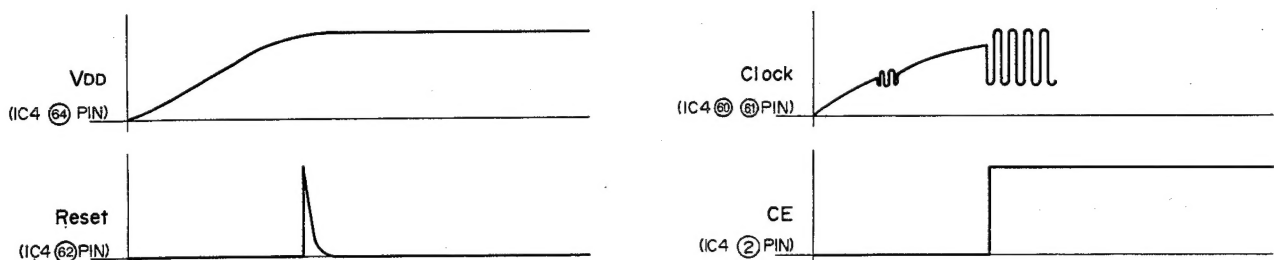
## Station name/Time display switch

This switch allows to select if the display shows station names or the present time. Before switching this switch, turn AC power off. Switching this switch with AC power on will not change the setup. When this switch is switched, all memory contents (preset channels timer, clock, etc.) are cleared.

Station Name On/Off SW	Station Name Display	Number of Preset Channels
0	ON	6 in each of A/B, total 12
1	OFF	10 in each of A and B, total 20

## Operation of microprocessor IC4 at power ON

When voltage VDD at pin 64 (power supply) of IC4 rises at power ON and the reset signal at pin 62 differentiated by CE signal (Chip Enable signal) at pin 2 rises to half of VDD, the clock starts. When the reset signal lowers to half of the VDD, the microprocessor starts operating and the unit is set to normal operation mode.



## Terminal description

Terminal description																																
Terminal No.	Symbol	Name	I/O	Function																												
1	PY1	N.C.	O	Not used. On the PC board, make it capable of being pulled up using a resistor.																												
2	PY2	C.E.	I	Backup (AC OFF) detection terminal. When L level is detected, the backup condition is set and the clock is stopped. Note: The rise from L to H shall be faster than the rise of reset. H: AC ON L: AC OFF																												
3	PY3	N.C.	I	Not used. Pull down with the GND or a resistor.																												
4-11	PX0 ~ PD3	KEY RETURN 0 ~ 7	I	Key return input. All pulled down (10k to 100k). H: AC ON L: AC OFF																												
12 ~ 15	PC0 ~ PC3	KEY SCAN 0 ~ 3	O	Key scanning signals.																												
16	PF0	TV BOTH	O	TV bilingual multiplexed audio mode control terminals. <table><tr><td>Mode \ Port</td><td>PF0</td><td>PF1</td></tr><tr><td>MAIN</td><td>L</td><td>H</td></tr><tr><td>SUB</td><td>L</td><td>L</td></tr><tr><td>BOTH</td><td>H</td><td>L</td></tr></table>	Mode \ Port	PF0	PF1	MAIN	L	H	SUB	L	L	BOTH	H	L																
Mode \ Port	PF0	PF1																														
MAIN	L	H																														
SUB	L	L																														
BOTH	H	L																														
17	PF1	TV MAIN	O																													
18	PF2	MONO	O	Mono/Auto stereo control terminal. Permanently L during TV bilingual reception. H: MONO L: AUTO STEREO																												
19	PF3	VHF H	O	Band selection control terminal. Selects the band by the combination with AO and BO of PLL IC. <table><tr><td>Band \ Port</td><td>AO</td><td>BO</td><td>PF3</td></tr><tr><td>FM</td><td>H</td><td>L</td><td>L</td></tr><tr><td>AM</td><td>L</td><td>H</td><td>L</td></tr><tr><td>LW</td><td>H</td><td>H</td><td>L</td></tr><tr><td>VHF L</td><td>H</td><td>H</td><td>L</td></tr><tr><td>VHF H</td><td>H</td><td>H</td><td>H</td></tr><tr><td>UHF</td><td>L</td><td>L</td><td>L</td></tr></table>	Band \ Port	AO	BO	PF3	FM	H	L	L	AM	L	H	L	LW	H	H	L	VHF L	H	H	L	VHF H	H	H	H	UHF	L	L	L
Band \ Port	AO	BO	PF3																													
FM	H	L	L																													
AM	L	H	L																													
LW	H	H	L																													
VHF L	H	H	L																													
VHF H	H	H	H																													
UHF	L	L	L																													
20	PE0	PLL DATA	O	PLL IC data output. Connected to CX7925B DIN terminal.																												
21	PE1	PLL CLOCK	O	PLL IC clock output. Connected to CX7925B CLK terminal.																												
22	PE2	PLL LATCH	O	PLL IC latch output. Connected to CX7925B LAT terminal.																												
23	PE3	KEY SCAN 4	O	Key scanning signal.																												
24	PB0	POWER	O	Relay control terminal. H: POWER ON L: POWER OFF																												
25	PB1	MUTING	O	Muting control during band switching, frequency scanning, etc. H: MUTE ON L: MUTE OFF																												
26	PB2	BIL	I	Bilingual signal input during multiplexed audio reception. H: BILINGUAL L: NORMAL																												
27	PB3	N.C.	O	Not used. Open or pulled down.																												
28	PA0	SD	I	Stop signal input for auto tuning. H: TUNE L: POWER OFF																												
29	PA1	TEST	I	Test mode setting input. H: NORMAL L: TEST																												
30	PA2	SDATA	O	System control DATA output.																												
31	PA3	SBUSY	I/O	System control BUSY input/output.																												
32	VSS			GND terminal.																												
33 ~ 48	S0 ~ S15		O	FL segment drive terminals. Pull-down resistors are incorporated with masked devices.																												
49 ~ 56	T7 ~ T0		O	FL grid drive terminals. Pull-down resistors are incorporated with masked devices.																												
57	VFDP			FL -ve power supply (-28.5V).																												
58	INT2		I	Not used. Connected to VDD.																												
59	INT1	DATAI	I	System control DATA input.																												
60 ~ 61	ETAL EXTAL			Clock oscillator terminals. X'tal 4.194304.MHz.																												
62	RST	RESET	I	Reset signal input. H: NORMAL L: RESET																												
63	PY0		O	Not used. Open. (On the PC board, make it capable of being pulled up).																												
64	VDD			+B terminal (5V).																												

# KT-76

## Test mode

### 1. Setting Test Mode

To enter the test mode, reconnect AC power cord while the microprocessor's TEST port (pin 29) is connected to GND.

### 2. Contents of Test Mode

#### (1) Display

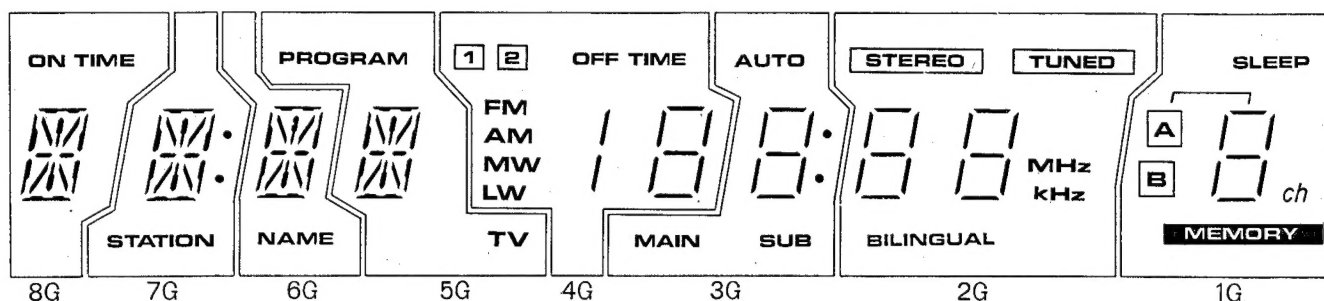
When AC power is turned ON in step 1, all FL segments go on except "STEREO", "TUNED" and "BILINGUAL".

These three indicators are lit by the tuner circuitry, and has no relationship with the test mode operated at preset. To return the display to the normal display, press the POWER switch.

#### (2) Test Point Setting

At the same time as the display in (1), the frequencies listed on the attached sheet are stored automatically in the tuner's preset memory.

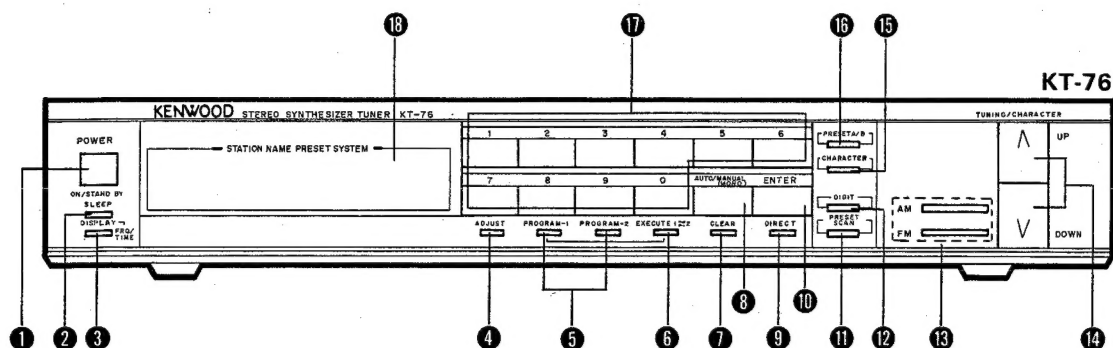
In the test mode, 20 stations are preset without station name display, regardless of the STATION NAME switch setup.



## Memory clear method

1. Turn AC power on while depressing the CLEAR button. This clears all memory contents (preset stations, timer and clock) regardless of the backup condition setup.

## CONTROLS

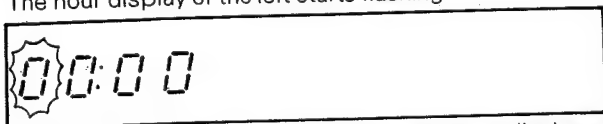


- 1 POWER switch
- 2 SLEEP TIMER button
- 3 DISPLAY FRQ/TIME button
- 4 ADJUST button
- 5 PROGRAM 1, 2 button
- 6 EXECUTE 1-2 button
- 7 CLEAR button
- 8 TUNING MODE button
- 9 DIRECT tuning button
- 10 ENTER button
- 11 PRESET SCAN button
- 12 DIGIT button
- 13 Band selector buttons
- 14 TUNING button
- 15 CHARACTER button
- 16 PRESET A/B switch
- 17 PRESET buttons (1 - 0)

## OPERATING INSTRUCTIONS

### Setting the current time

1. Confirm that the DIGITAL FREQUENCY COUNTER is in the time display mode.  
When the DIGITAL FREQUENCY COUNTER is in the frequency display mode, press the POWER switch.
2. Press the ADJUST button.  
The hour display of the left starts flashing.



When the station name is not displayed.

3. Input the current time using the PRESET buttons (1 to 0).  
The clock employs 24-hour system. Press the PRESET buttons as follows.

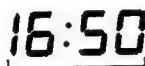
AM 9:05     Input in the order of  
                  0-9-0-5

PM 4:50     Input in the order of  
                  1-6-5-0



When 4 digits are input, the entire time display flashes.  
To change the input digit, press the CLEAR button and proceed the above steps again.

4. Press the ENTER button  
The time display illuminates.



Illuminates.

When the ENTER button is pressed, the clock starts.  
Press the ENTER button according to the time signal of the radio or telephone service.

#### Note:

When the time display flashes, this indicates the power failure occurred. At that time, reset the current time.

### Listening to broadcasts

#### Auto tuning

1. Press the POWER switch.
2. Set the input mode of the amplifier to tuner.
3. Select the reception band with the band selector buttons.
4. Press the TUNING MODE button so that the AUTO indicator lights.
5. Press UP or DOWN side of the TUNING button.  
The unit starts scanning in the specified direction and stops at a station with a sufficient signal strength.
6. Adjust the volume control of the amplifier.

#### Manual tuning

1. Press the POWER switch.
2. Set the input mode of the amplifier to tuner.
3. Select the reception band with the band selector buttons.
4. Press the TUNING MODE button so that the AUTO indicator disappears. In the FM band, the MONO indicator lights.
5. Press UP or DOWN side of the TUNING button until the desired station is received.  
When the TUNING button is kept pressed, the displayed frequency changes rapidly.
6. Adjust the volume control of the amplifier.

#### Direct station tuning

1. Press the DISPLAY button to set the display window to the frequency mode.  
Select the desired band with the band select button (AM/FM).
3. While the frequency indicator is displayed, press the DIRECT button.

4. Input the number of the frequency with the PRESET buttons.
5. When the input frequency is within the range of the band, the station of the input frequency is received immediately after the final column is input.  
If the input frequency is out of the range of the band, the frequency indicator flashes for 5 seconds and error indication is displayed, then the display mode before pressing the DIRECT button resumes.
6. During inputting the frequency, when the incorrect PRESET buttons is pressed by mistake and is noticed, press the CLEAR button to return to the standby mode for the first column input.

### Presetting stations

With the station name displayed, a total of 12 stations can be preset, and with the station name not displayed, a total of 20 stations can be preset for AM or FM broadcast. (Select the number of preset stations with the STATION NAME AND PRESET select switch located on the rear panel of the tuner.)

1. Press the DISPLAY button to set the display to the frequency display mode.
2. Press the AM or FM band select key.
3. Receive the desired station to be memorized with the TUNING button or DIRECT tuning function.  
At this time, input the station name if required, referring to "Station Name Indication" on page 9. (This operation is possible after memorizing the frequency.)
4. Press the ENTER button.  
"MEMORY" displays in the display window.
5. Select the A or B preset group with the PRESET A/B switch.  
When this is not done, the preset group which is currently indicated is selected.
6. Within 5 seconds, press any of 1 to 6 numeric keys (when the station name is displayed) or 1 to 0 keys (when the station name is not displayed).

The MEMORY indicator in the display window goes off and the preset indicator will light.  
In the same way, preset the other stations. When presetting the station into the "10" preset indicator, press the "0" preset button.

#### STATION NAME AND PRESET switch located on the rear panel of the tuner

- ☐: When the station name is not displayed (10 stations for each A and B)
- ☐: When the station name is displayed (6 stations for each A and B)



#### Note:

1. When the station is memorized into the preset number in which another station has been preset, the previously-preset station will be cleared and the newly-preset station will be memorized.  
Be sure to press the preset button (1 to 0) after releasing the ENTER key.  
If the preset button (1 to 0) is pressed while the ENTER key is pressed, the same frequency may also be memorized into the other preset button.
2. In the station name display mode (when the STATION NAME AND PRESET switch on the rear panel is set to "12" position), the 7 to 0 preset buttons are invalid.
3. Operate the preset station number switch on the rear panel after plugging out the power cord from the AC outlet.
4. If you perform the above operation after you have once preset the tuning station, the preset contents will be erased.

## Preset memory

For presetting broadcast stations, a total of 12 stations can be preset when the station name is displayed, or a total of 20 stations can be preset when the station name is not displayed for all bands randomly.

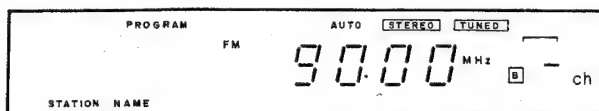
Up to 6 stations or 10 stations can be preset for each A and B and B group

### How to preset

1. Receive the desired station to be memorized with the UP/DOWN button or using the direct tuning function.
2. Input the station name when the station name display is required. (This operation is possible after memorizing the frequency.)
3. Press the ENTER button. (This is valid only when the frequency is displayed.)
4. Select the A or B preset group with the PRESET A/B switch. When this is not done, the preset group which is currently indicated is selected.
5. Press any of the 1 to 6 (when the station name is displayed) or 1 to 0 (when the station name is not displayed) buttons.

Example: To memorized 90.0 MHz into A-3 channel  
(station name display mode)

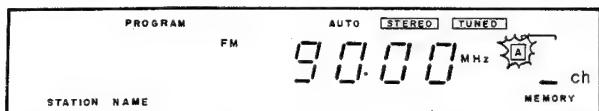
1. Receive the desired station with the UP/DOWN button or DIRECT button.



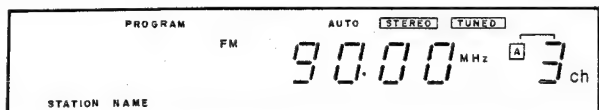
2. Press the ENTER button on. "MEMORY" lights.



3. Press the Preset A/B switch once to indicate "A".



4. Press "3" button on. "MEMORY" goes off, and "3" lights.



### ■ Recalling the Preset Memory

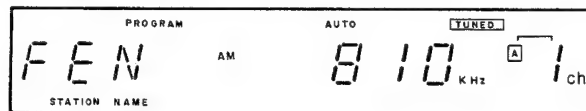
During the tuner functions, select "A" or "B" with the A/B select switch and press any of the PRESET buttons. The memorized contents corresponding to the PRESET number pressed will be displayed.

When the A/B switch is not pressed, the memorized contents corresponding to the PRESET button of the currently selected group will be recalled.

However, when the station name display mode is selected, four "7" to "0" Preset buttons do not function.

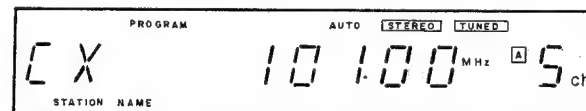
Example: During receiving the "FEN AM 810 kHz" in A-1 preset channel, to recall "CX FM 101 MHz" of A-5 preset

1. During preset A-1: AM 810 MHz reception



2. Press "3" button on.

"FM 101 MHz" memorized in A-5 channel is received



### Preset scan

During the tuner is functioning, when the PRESET SCAN button is pressed, each preset frequency will be received for 5 seconds sequentially.

If no station is preset in the preset channel, the next preset channel will be received after one second.

When any of the preset channel is currently received, the scanning starts from the next preset channel. If not, scanning will start from the A-1 preset channel.

→ A-1 → A-2 ----- A-9 → A-0 → B-1 → B-2 ----- B-9 → B-0 →

To release this function, press the PRESET SCAN button again.

### Preset station tuning

1. Press the PRESET A/B switch to select A or B.
2. Press any of 1 to 0 PRESET buttons.

The broadcast station which is preset into the PRESET button pressed will be received.

#### Note:

1. Since the plug-in backup system is provided with this tuner, the station frequencies preset in each PRESET button will not be cleared even when the POWER switch is set to the STAND BY position. However, when the AC power plug is disconnected from the AC outlet, the preset frequencies will be cleared approx. 3 days later.
2. When the station name display mode is selected, the "7" to "0" PRESET buttons are invalid.

### Last channel memory

When the POWER switch is turned On, or when the broadcast band (AM or FM) is changed to another, the last received channel of each band will be received. (Last channel memory function)

### ■ Station Name Indication (Station Name Preset)

Set the select switch located on the rear panel of the tuner to the STATION NAME PRESET 12 position.

#### Character input procedure

1. Tune to the desired station with the TUNING button or the DIRECT tuning method.

When the desired station has been preset, call the station with the corresponding PRESET A/B switch and PRESET buttons.



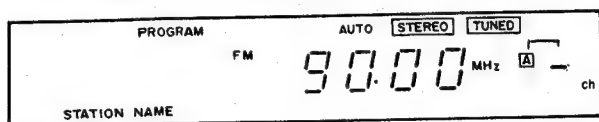
- Press the CHARACTER button to set the character input mode. The first column of the character display section begins flashing.
- Turn the TUNING knob to select the character.
- When the desired character is displayed, press the DIGIT button. Flashing will shift to the next column.
- Repeat procedure 3 and 4 for four times to complete inputting. The character input mode will be released.
- When the incorrect character input by mistake and is noticed, press the CLEAR button to return to the standby mode for the first column input.
- Even in the middle of inputting, pressing the CHARACTER key again will release the character input mode. At this time, the data which has been input is valid.
- When the preset channel to be named is being received, the character data will be automatically stored in the currently-displayed preset channel after inputting operation is completed.

### Note:

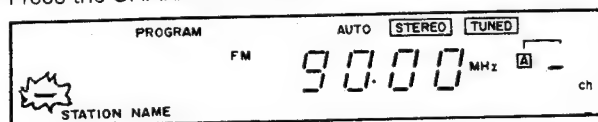
- Disconnect the power plug of the tuner from the AC outlet before changing the setting of the select switch for the number of preset stations.
- When the above operation is performed after the broadcast station has been preset, the preset contents will be cleared.

Example 1: To receive the 90.0 MHz FM broadcast and input the characters "C, B, E" when the station other than the preset channel memories is received. Shows the indicator flashing.

- Tune to 90.0 MHz FM broadcast.

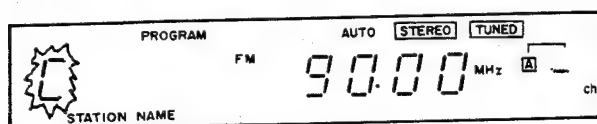


- Press the CHARACTER button.

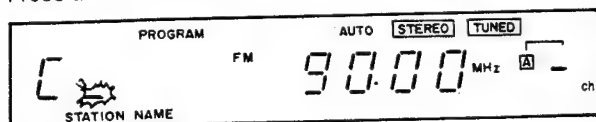


- Press the TUNING UP button three times to select "C".

→ A → B → C

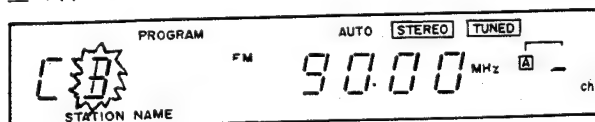


- Press the DIGIT button.

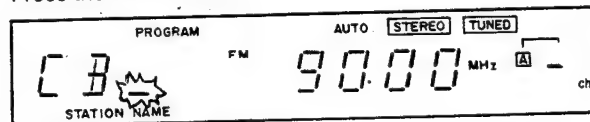


- TUNING UP button twice times to select "B".

→ A → B

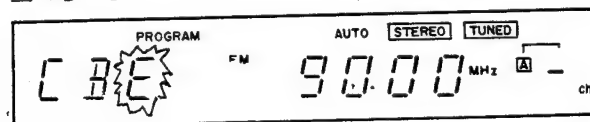


- Press the DIGIT button.

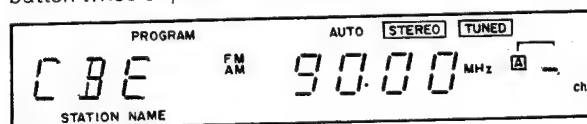


- TUNING UP button five times to select "E".

→ B → C → D → E



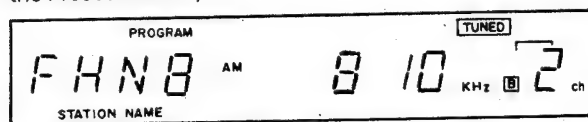
- As the fourth column should be left blank, press the DIGIT button twice or press the CHARACTER button.



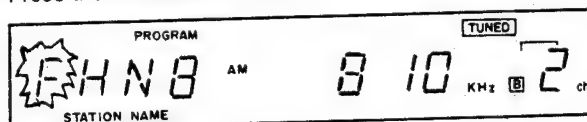
- After inputting is completed, memorize it into the desired preset channel according to the "Preset Station Tuning" section.

Example 2: To change the station name from "FHN8" for 810 kHz AM broadcast memorized in B-2 preset channel to "FEN".

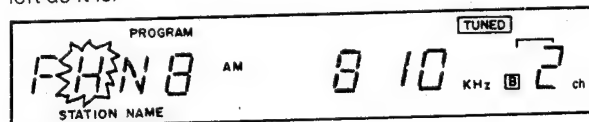
- Recall the B-2 preset channel with the PRESET A/B switch and the PRESET button according to "Recalling the Preset Memory".



- Press the CHARACTER button.

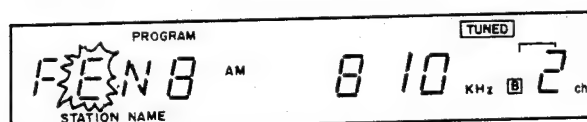


- Press the DIGIT button to shift the flashing character to the next column since the first character "F" should be left as it is.

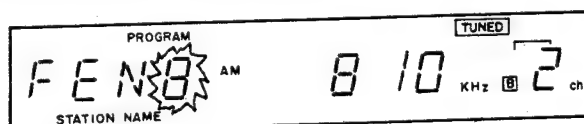


- Press the TUNING (DOWN) button to select "E".

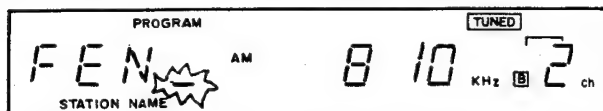
H → G → F → E



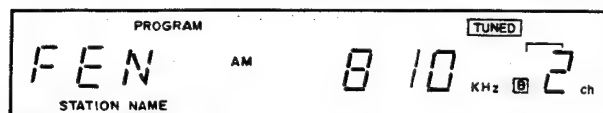
- Press the DIGIT button twice.



6. Press the TUNING button to select a blank.



7. Press the DIGIT button or press the CHARACTER button.



## Operating timer

### Setting the program timer

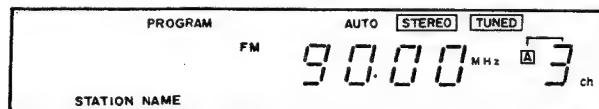
- Timer Setup Procedure (The same procedure can be used for both Program 1 and Program 2.)

The timer can be set only when the POWER switch has been turned ON. When power is OFF, it is possible only to check the program contents.

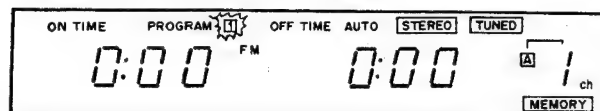
During setup, the station which has been received is not changed, and the AUTO, BAND, MAIN and SUB indications remain the same.

Example 1. To set a Preset channel (B-2) in Timer 1 with On Time 8:45 and Off Time 9:35

1. Current Condition  
Reception of FM 90.0 MHz stored in A-3.



2. Displaying PROGRAM  
Press the Program 1 (PGM-1) key.



When the PGM-1 key is pressed, the "1" indicator flashes and the display shows the content of Program Timer 1.

The above display continues for approx. 5 seconds. During this period, press the ENTER key during to enter the Timer Setup mode.

When the PGM-1 key is pressed during this display period, the previous returns to the previous status.

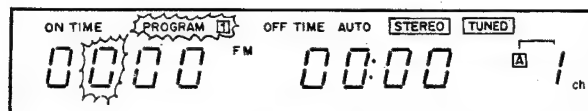
3. Starting Setup  
Press the ENTER key.



When the ENTER key is pressed, the "PROGRAM 1" indicator flashes to indicate that the Timer Setup mode. At the same time, the first digit of the ON TIME display starts to flash, indicating the entry standby for this digit.

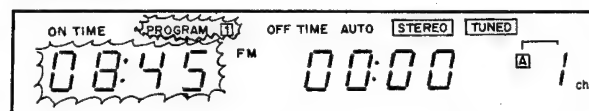
If you find it unnecessary to change the current ON TIME, just press the ENTER key; you can then start the entry of the OFF TIME.

4. Entry of ON TIME  
Press numeric key "0".



When "0" is pressed, the first digit of the ON TIME display goes "0" which is lit continuously, and the second digit starts flashing. When you made a mistake in entry, press the CLEAR key; the display returns to the stage of entry standby for the first digit.

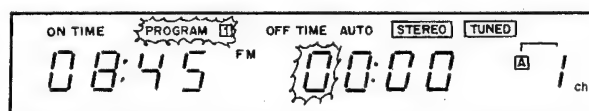
5. Entry of ON TIME Using 10 Numeric Keys  
Enter "8", "4" then "5". Press these numeric keys within 15 seconds.



When four ON TIME digits have been entered, all the ON TIME digits flashes to indicate the end of ON TIME entry. If the setup is correct, press the ENTER key.

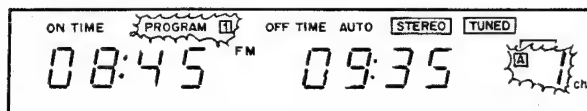
If the desired ON TIME is obtained by entering until the third digit, press the ENTER key after the third digit. To modify the ON TIME entered, press the CLEAR key; the display returns to the stage or entry standby for the first digit.

6. Setting of ON TIME  
Press the ENTRY key.



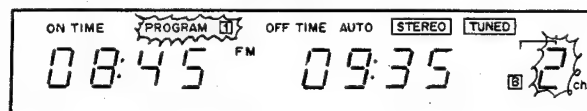
When the ON TIME entry is finished, the ON TIME display lights continuously and the first digit of the OFF TIME display starts to flash, indicating the entry standby for this digit. If you found entry mistake at this time, press the CLEAR key; the display returns to the stage of entry standby for the first digit.

7. Entry and Setting of ON TIME  
Press numeric keys "0", "9", "3" then "5", and press the ENTER key.



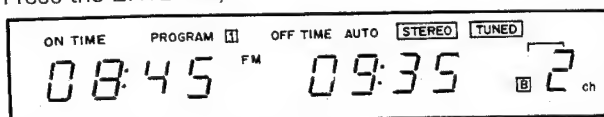
When the ENTER key is pressed, the OFF TIME display lights continuously, indicating the end of OFF TIME entry. In its place, the preset channel display starts flashing to indicate the standby for preset channel entry. If you found entry mistake at this time, press the CLEAR key; the first press returns the display to the stage of entry standby for the OFF TIME first digit, and the second press returns it to the stage of entry standby for the ON TIME first digit again.

8. Entry of Preset Channel  
Select the preset channel group by pressing the PRESET A/B key, then press numeric key "2".



When the PRESET A/B key is pressed, the other indicator that the currently-flashing indicator lights (A→B, or B→A). When the numeric key is pressed, the figure of the preset channel changes to that pressed. If you found entry mistake at this time, press the CLEAR key; the display returns to the status before the PRESET A/B key was pressed.

- End of Timer Setup  
Press the ENTER key.

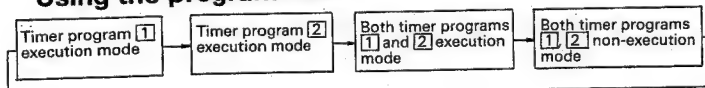


When the preset channel number has been entered, press the ENTER key. The preset channel and PROGRAM indicators light continuously, indicating the end of timer setup. The above display continues for approx. 5 seconds, and the display returns to the initial status.

#### Notes:

- If the PGM-1 key is pressed during timer setup operation, the timer setup mode is canceled and the display returns to the initial status.
- When the station name display is applied, it is possible to select preset channels 1 to 6 for both A and B.

### Using the program timer



- Press the POWER switch so that the unit is in the standby mode.
- Press the EXECUTE 1 = 2 button to select the program timer to be used.  
To use program timer 1 or 2, press the EXECUTE 1 = 2 button so that the PROGRAM 1 or 2 indicator light.
- When the preset on time is reached, the program timer turns on and the selected preset station is received.
- When the preset off time is reached, the program timer turns off.

### To function timer program 1, 2

Press the EXECUTE 1 = 2 button display the timer program 1 or 2 indicator.

#### Note:

With both Timer 1 and 2 programmed, when the Timer 1 is executed, the Timer 2 will not function. Also when the Timer 2 is executed, the Timer 1 will not function.

### To cancel the program timer

Press the EXECUTE 1 = 2 button so that the PROGRAM 1 and/or 2 indicator goes off.

### To check the contents of timer program

- Press the [PGM-1] or [PGM-2] key in which the program to be checked is input. The contents of the selected program is displayed for 5 seconds.
- Then the display before the key is pressed resumes.  
Even in the STAND BY mode (when only the time is displayed), pressing [PGM-1] or [PGM-2] key will display the program contents for 5 seconds, then the time display will resume.  
Setting the timer is possible only when the POWER switch is turned ON. When the POWER is OFF, only the program contents can be checked.

### Notes on using program timer

- The program timer can be used only when the unit is in the standby mode.

- The unit should be set to standby mode before the preset program timer on time.
- If the EXECUTE 1 = 2 button or POWER switch is operated between preset timer on time or off time, the program timer may not function correctly.
- Two settings of the program timer 1 and 2 should be at different times.

#### Notes:

- The timer program functions only when the Timer 1 or 2 indicator lights.
- When the PROGRAM key is pressed or the POWER switch is pressed ON/OFF during the timer is activated, the program timer will not function correctly.
- Be sure not to overlap the times when setting the programs 1 and 2. (Refer to the example in the figure on the right.)
- When both 1 and 2 programs are input, the program 2 has a priority.
- When the ON-time for the program 1 reaches during the program 2 is activated, the program 1 does not function.
- When the ON-time for the program 2 reaches during the program 1 is activated, the program 2 begins functioning.
- When functioning both programs 1 and 2 sequentially, be sure to leave 1 minute between the OFF-time of the first program and the ON-time of the second program.

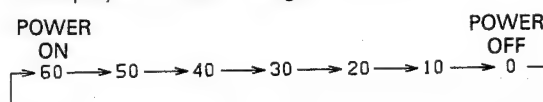
Example: When receiving 90.00 MHz FM broadcast for one hour from 8 o'clock and 954 kHz AM broadcast for one hour from 9 o'clock, set the ON-time for the program 1 to 8:00 and the OFF-time to 8:59, and set the ON-time for the program 2 to 9:00 and the OFF-time to 9:59.

- When the timer function is activated. The same operation will be performed on the same times every day. When the timer operation is not required, release the timer function according to "To Deactivate the Timer Function".
- On listening to the tuner with the timer function activated (when the Timer 1 or 2 indicator lights), when the set time comes, the timer operation will function.  
At this time, the receiving station will be changed to the station which has been programmed for the timer. When recording the broadcast from the tuner, be sure to confirm the programmed contents of the timer.
- The programmed contents of the timer cannot be cancelled. When the timer is not used, be sure to release the timer function according to "To Deactivate the Timer Function".

### Using the sleep timer

The sleep timer can be used to turn the power off after up to 60 minutes. The power off time can be set with an interval of 10 minutes.

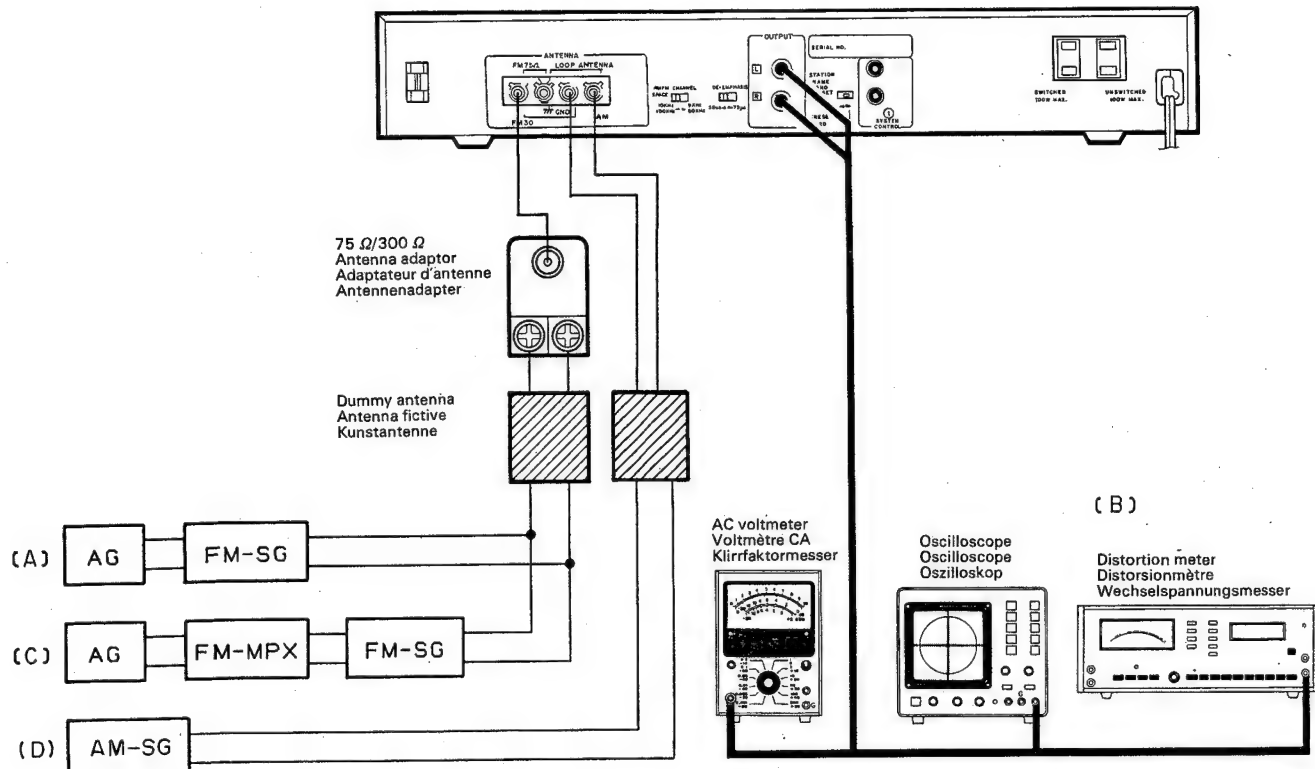
- Press the SLEEP button.  
The SLEEP indicator lights and 60 is displayed.
- To turn the power off within 60 minutes, press the SLEEP button.  
The displayed number changes as follows.



#### Notes:

- The sleep timer has priority over the program timer.
- When the remaining time or the SLEEP TIMER is displayed, pressing any of the PRESET buttons, TUNING button, BAND select button, etc. will display the frequency, then 5 seconds later, the remaining time display resumes.
- When the remaining time is within 10 minutes, pressing the SLEEP button will turn the power OFF.
- To release the SLEEP TIMER, press the POWER switch to turn the power OFF.
- When the time is not set, the SLEEP TIMER is not displayed.

## ADJUSTMENT/REGLAGE/ABGIEICH



## ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
<b>FM SECTION</b> Unless otherwise specified, the individual switches should be set as following: SELECTOR: FM MODE: FM MODE/AUTO							
1	BAND EDGE (1)	—	Connect a DC voltmeter between TP20(VT) and TP26(GND).	87.5MHz	L7 (Front end)	2.5V	(a)
2	BAND EDGE (2)	—	Connect a DC voltmeter between TP20(VT) and TP26(GND).	108.0MHz	TC1 (Front end)	8.0V	(a)
Repeat alignments 1 and 2 several times.							
3	RF ALIGNMENT	(A) 98.0MHz 1kHz, $\pm 75$ kHz dev	(B)	MONO 98.0MHz	L2,3 (Front end)	Maximum amplitude and symmetry of the oscilloscope display.	
4	DISCRIMINATOR	(A) 98.0MHz 1kHz, $\pm 75$ kHz dev 60dB $\mu$ (ANT input)	Connect a DC voltmeter between TP18 and TP19.	MONO 98.0MHz	L13	0V	(b)
5	VCO	(A) 98.0MHz 0 dev 60dB $\mu$ (ANT input)	Connect a 330k $\Omega$ resistor to TP14. Connect a frequency counter to the resistor via an AC voltmeter.	98.0MHz	VR2	19.00kHz	(c)
6	DISTORTION (STEREO)	(C) 98.0MHz 1kHz, $\pm 68.25$ kHz dev Selector: L or R 60dB $\mu$ (ANT input)	(B)	98.0MHz	T1 (Front end)	Minimum distortion. (L or R)	
7	TUNING LEVEL	(A) 98.0MHz 0 dev 18dB $\mu$ (ANT input)	—	98.0MHz	VR1	Adjust VR1 so that FL1(TUNED) goes off. Then, adjust VR1 and stop at the point where FL1(TUNED) goes on.	
<b>AM SECTION</b> Keep the AM loop antenna installed. SELECTOR: AM							
(1)	BAND EDGE (1)	—	Connect a DC voltmeter between TP20(VT) and TP26(GND).	530kHz (531kHz)	L5	1.5V	(a)
(2)	BAND EDGE (2)	—	Connect a DC voltmeter between TP20(VT) and TP26(GND).	1610kHz (1602kHz)	TC4	8.0V	(a)

Repeat alignments (1) and (2) several times.						
(3)	RF ALIGNMENT (1)	(D) 630kHz 400Hz, 30% mod	(B)	630kHz	L3	Maximum amplitude and symmetry of the oscilloscope display.
(4)	RF ALIGNMENT (2)	(D) 1440kHz 400Hz, 30% mod	(B)	1440kHz	TC2	Maximum amplitude and symmetry of the oscilloscope display.
Repeat alignments (3) and (4) several times.						
(5)	TUNING LEVEL	(A) 1000(999)kHz 0 dev 25dBμ(Ant input)	—	1000(999)kHz	VR4	Adjust VR4 so that FL1(TUNED) goes off. Then, adjust VR4 and stop at the point where FL1(TUNED) goes on.

## REGLAGE

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU TUNER	POINT DE L'ALIGNEMENT	ALIGNER POUR	FIG.
SECTION MF							
Sauf en cas d'indications spéciales, régler chaque commutateur comme suit: SELECTEUR: FM MODE: FM MODE/AUTO							
1	BORD DE BANDE (1)	—	Relier un voltmètre CC entre les TP20(VT) et TP26(GND).	87,5MHz	L7 (Contrôle)	2,5V	(a)
2	BORD DE BANDE (2)	—	Relier un voltmètre CC entre les TP20(VT) et TP26(GND).	108,0MHz	TC1 (Contrôle)	8,0V	(a)
Répéter les points 1 et 2 plusieurs fois.							
3	ALIGNEMENT HT	(A) 98,0MHz 1kHz, ±75kHz dev	(B)	MONO 98,0MHz	L2.3 (Contrôle)	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
4	DISCRIMINATEUR	(A) 98,0MHz 1kHz, ±75kHz dev 60dBμ(Entrée ANT)	Relier un voltmètre CC entre les TP18 et TP19.	MONO 98,0MHz	L13	0V	(b)
5	VCO	(A) 98,0MHz 0 dev 60dBμ(Entrée ANT)	Relier une résistance de 330kΩ à TP14. Raccorder un compteur de fréquence à une résistance par l'intermédiaire d'un voltmètre CA.	98,0MHz	VR2	19,00kHz	(c)
6	DISTORSION (STEREO)	(C) 98,0MHz 1kHz, ±68,25kHz dev Selection: L ou R 60dBμ(Entrée ANT)	(B)	98,0MHz	T1 (Contrôle)	Distorsion minimale. (L ou R)	
7	NIVEAU D' ACCORDER	(A) 98,0MHz 0 dev 18dBμ(Entrée ANT)	—	98,0MHz	VR1	Ajuster VR1 que FL1(TUNED) est non allumé. Alors, ajuster VR1 et arrêter le mouvement de VR1 au moment où le FL1(TUNED)s'allume.	
SECTION MA							
Laisser l'antenne bouche MA installée. SELECTEUR: AM							
(1)	BORD DE BANDE (1)	—	Relier un voltmètre CC entre les TP20(VT) et TP26(GND).	530kHz (531kHz)	L5	1,5V	(a)
(2)	BORD DE BANDE (2)	—	Relier un voltmètre CC entre les TP20(VT) et TP26(GND).	1610kHz (1602kHz)	TC4	8,0V	(a)
Répéter les points (1) et (2) plusieurs fois.							
(3)	ALIGNEMENT HT (1)	(D) 630kHz 400Hz, 30% mod	(B)	630kHz	L3	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(4)	ALIGNEMENT HT (2)	(D) 1440kHz 400Hz, 30% mod	(B)	1440kHz	TC2	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
Répéter les points (3) et (4) plusieurs fois.							
(5)	NIVEAU D' ACCORDER	(A) 1000(999)kHz 0 dev 25dBμ(Entrée ANT)	—	1000(999)kHz	VR4	Ajuster VR4 que FL1(TUNED) est non allumé. Alors, ajuster VR4 et arrêter le mouvement de VR4 au moment où le FL1(TUNED)s'allume.	

## ABGLEICH

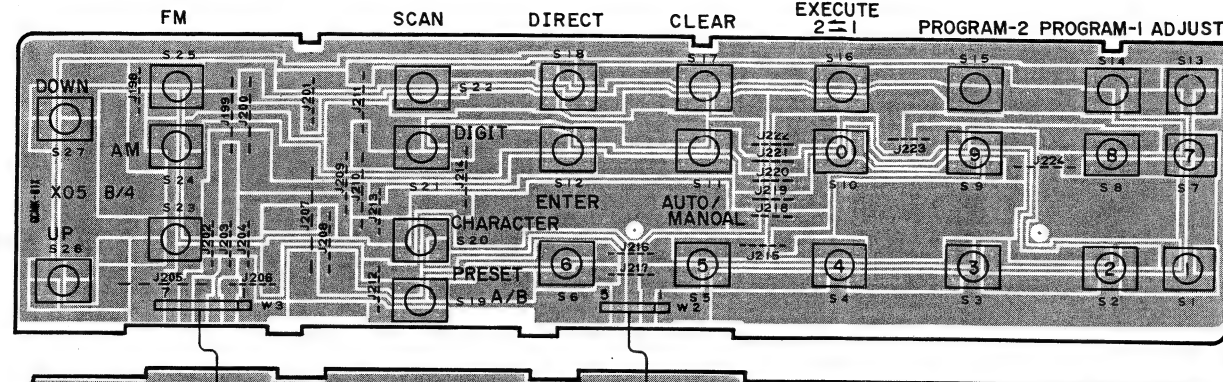
NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	TUNER-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
UKW-EMPfangSABTEILUNG Außer wenn anders angegeben, die verschiedenen Schalter wie folgt einstellen: SELECTOR: FM MODE:FM MODE/AUTO							
1	BANDKANTE (1)	—	Einen Gleichspannungsmesser zwischen TP20(VT) und TP26(GND) anschließen.	87,5MHz	L7 (Eingangsstufe)	2,5V	(a)
2	BANDKANTE (2)	—	Einen Gleichspannungsmesser zwischen TP20(VT) und TP26(GND) anschließen.	108,0MHz	TC1 (Eingangsstufe)	8,0V	(a)
Abstimmungen 1 und 2 mehrere Male wiederholen.							
3	EMPFANGS-BEREICH-ABSTIMMUNGEN	(A) 98,0MHz 1kHz.±75kHz Hub	(B)	MONO 98,0MHz	L2.3 (Eingangsstufe)	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
4	DISKRIMINATOR	(A) 98,0MHz 1kHz.±75kHz Hub 60dBμ(Ant-Eingang)	Einen Gleichspannungsmesser zwischen TP18 und TP19 anschließen.	MONO 98,0MHz	L13	0V	(b)
5	SPANNUNGS-GEREGELTER OSZILLATOR	(A) 98,0MHz 0 Hub 60dBμ(Ant-Eingang)	Einen 330kΩ Widerstand zu TP14 anschließen. Einen Frequenzzähler über einen Wechselspannungsmesser an den Widerstand anschließen.	98,0MHz	VR2	19,00kHz	(c)
6	KLIRRFAKTOR (STEREO)	(C) 98,0MHz 1kHz.±68,25kHz Hub Wähler: L oder R 60dBμ(Ant-Eingang)	(B)	98,0MHz	T1 (Eingangsstufe)	Minimal Klirrfaktor. (L oder R)	
7	ABSTIMM PEGEL	(A) 98,0MHz 0 Hub 18dBμ(Ant-Eingang)	—	98,0MHz	VR1	Den Pegelwiderstand VR1 so einstellen, daß der FL1(TUNED)anzeiger nicht leuchtet. Dann der Pegelwiderstand aufdrehen, und dem VR1 Halt geben wobei den FL1(TUNED)anzeiger leuchtet wird.	
MW-EMPfangSABTEILUNG Die MW Rahmenantenne angebracht lassen. SELECTOR: AM							
(1)	BANDKANTE (1)	—	Einen Gleichspannungsmesser zwischen TP20(VT) und TP26(GND) anschließen.	530kHz (531kHz)	L5	1,5V	(a)
(2)	BANDKANTE (2)	—	Einen Gleichspannungsmesser zwischen TP20(VT) und TP26(GND) anschließen.	1610kHz (1602kHz)	TC4	8,0V	(a)
Abstimmungen (1) und (2) mehrere Male wiederholen.							
(3)	HF-ABGLEICH (1)	(D) 630kHz 400Hz.30% mod	(B)	630kHz	L3	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
(4)	HF-ABGLEICH (2)	(D) 1440kHz 400Hz.30% mod	(B)	1440kHz	TC2	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
Abstimmungen (3) und (4) mehrere Male wiederholen.							
(5)	ABSTIMM PEGEL	(A) 1000(999)kHz 0 Hub 25dBμ(Ant-Eingang)	—	1000(999)kHz	VR4	Den Pegelwiderstand VR4 so einstellen, daß der FL1(TUNED)anzeiger nicht leuchtet. Dann der Pegelwiderstand aufdrehen, und dem VR4 Halt geben wobei den FL1(TUNED)anzeiger leuchtet wird.	



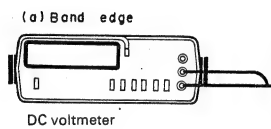
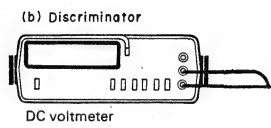
# PC BOARD

## COMPONENT SIDE VIEW

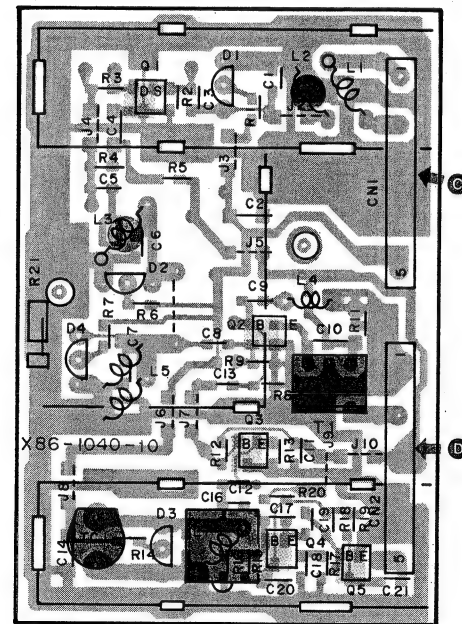
### TUNER UNIT (X05-3290-10)



FRONT  
TUNING / CHARACTER



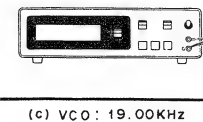
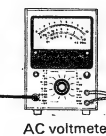
### FRONT END UNIT (X86-1040-10)



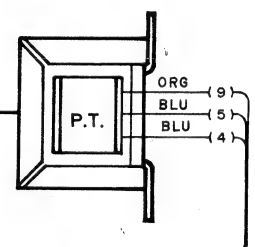
75Ω LOOP ANTENNA  
FM 300Ω ANTENNA

OUTPUT STATION NAME AND PRESET 20 PRESET 12 SYSTEM CONTROL

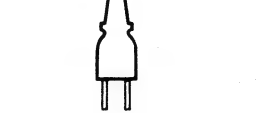
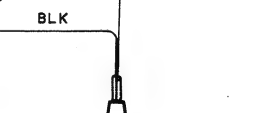
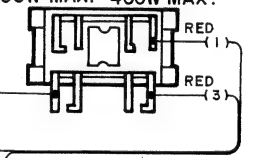
330K Ω resistor



KT-76



SWITCHED 400W MAX. UNSWITCHED 400W MAX.

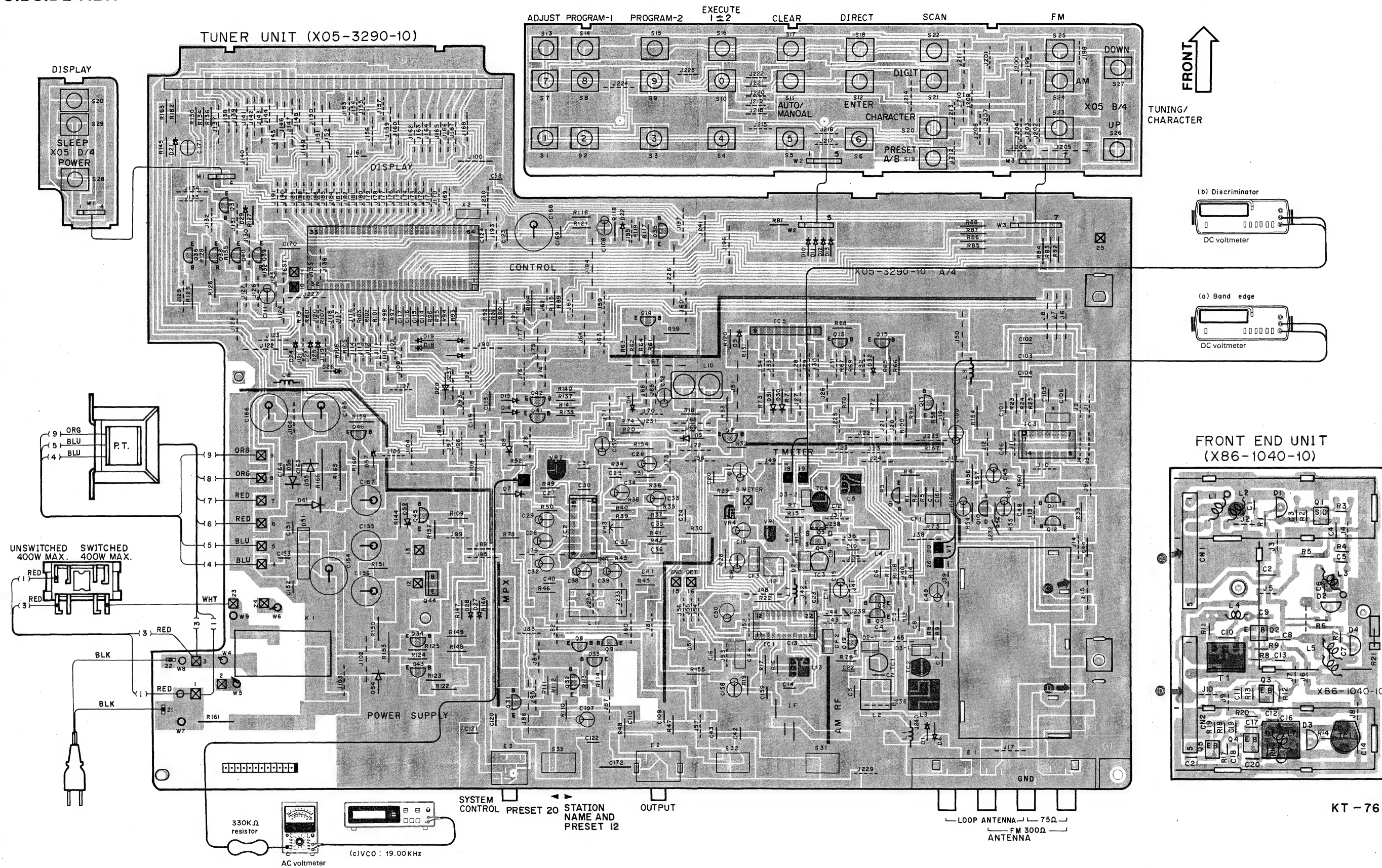


Refer to the schematic diagram for the values of resistors and capacitors.



# PC BOARD

## FOIL SIDE VIEW



KT - 76



JA501  
JC501  
2SA733 (A)  
2SA999  
2SC1845  
2SC1923  
2SC945 (A)  
2SD1302

2SD1266

2SA933S  
2SC1740S

2SC2714

2SK364

2SK302

3SK131

AN7470

LA7910

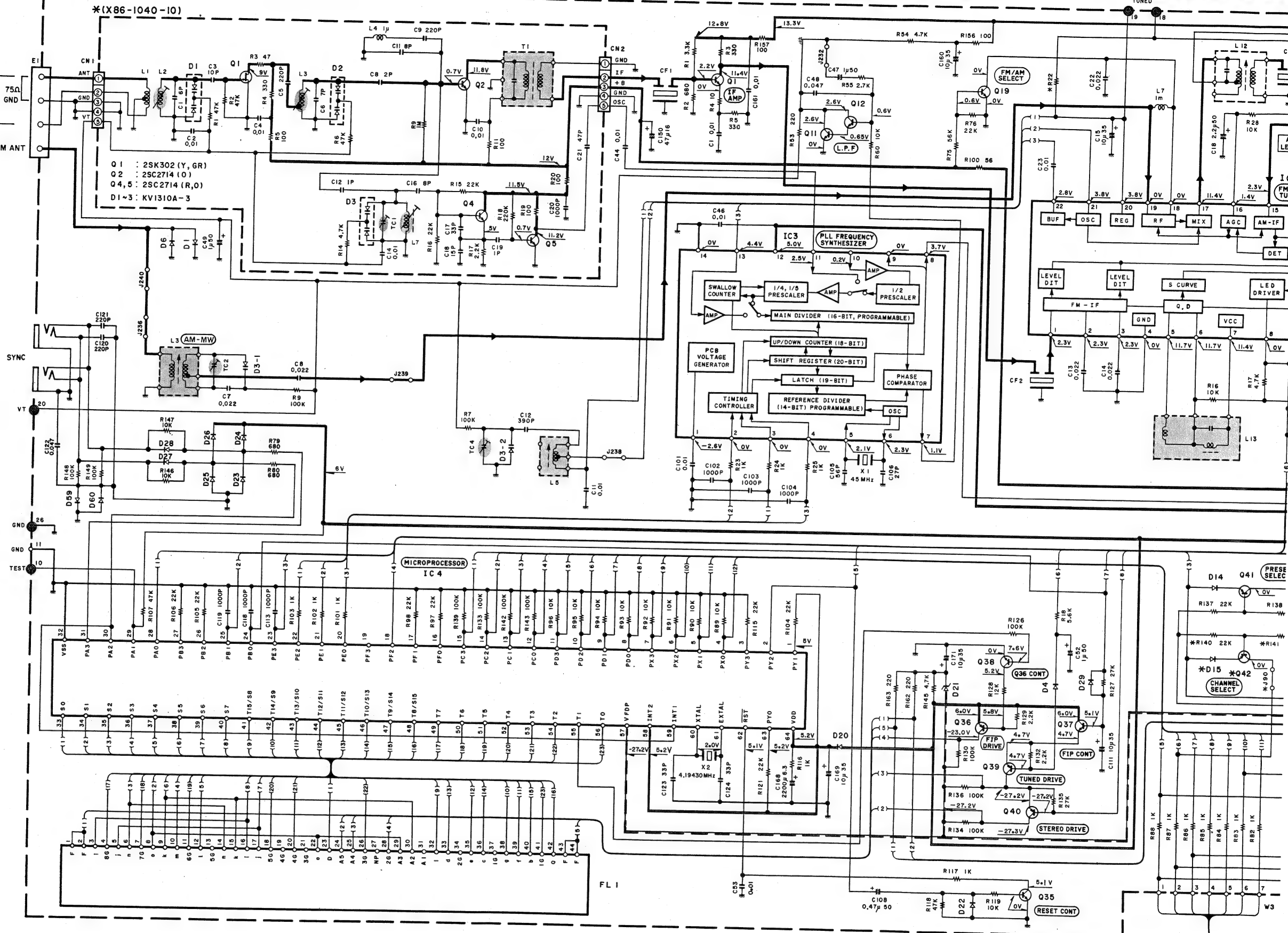
CX7925B

LA1265

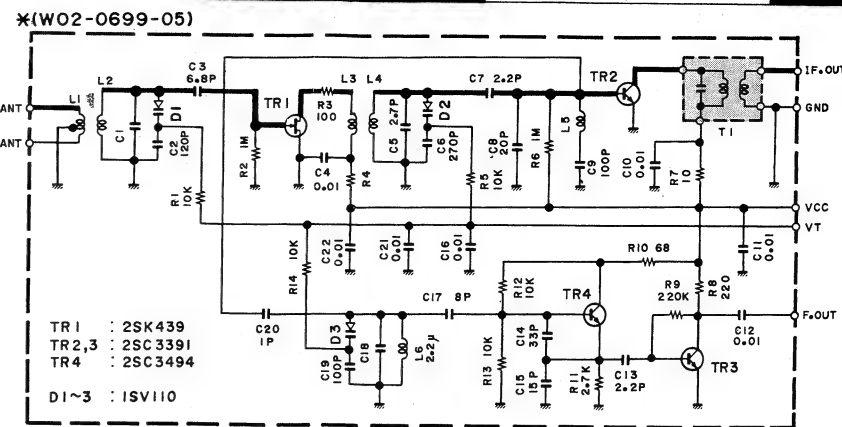
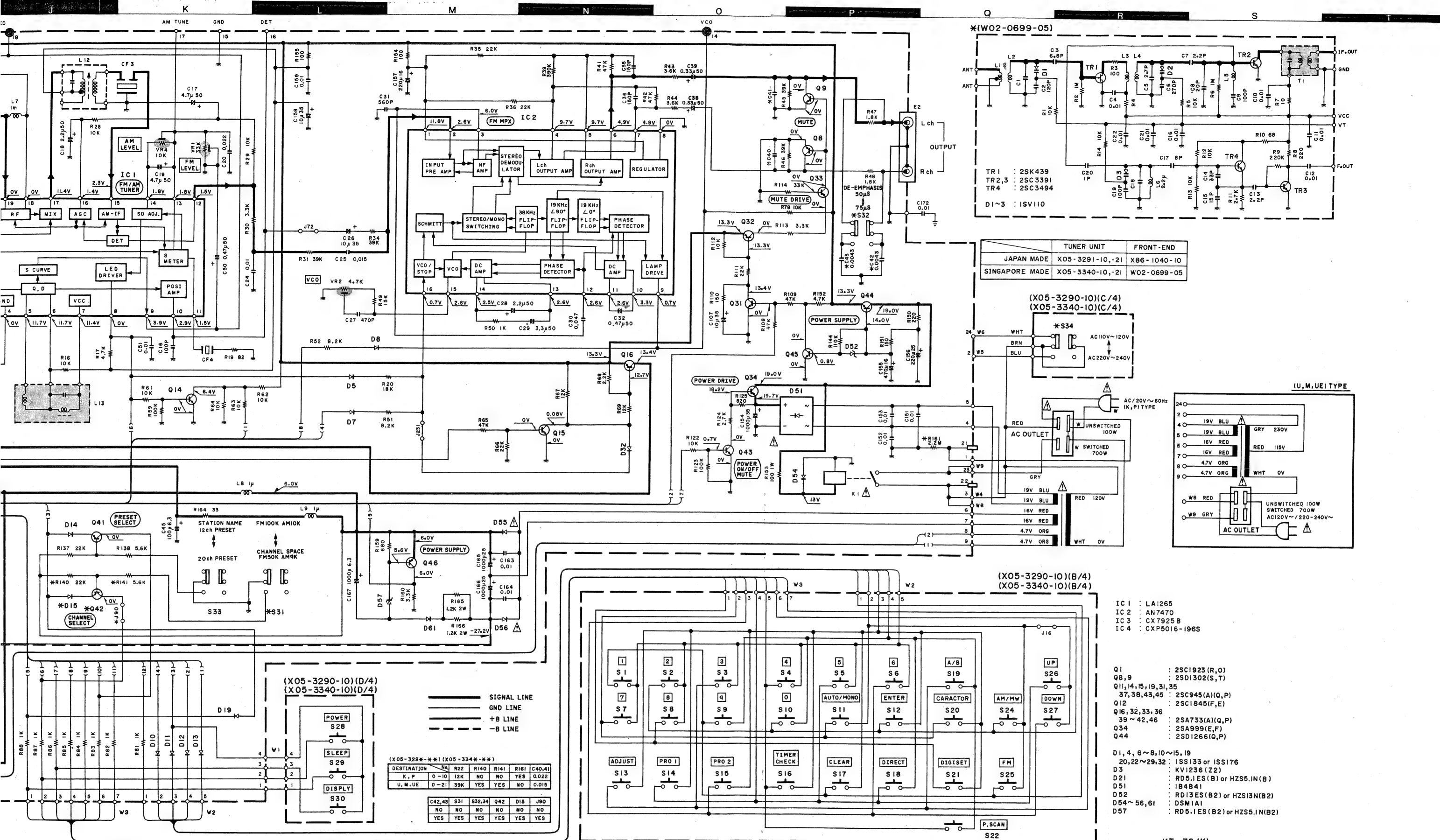
2SC3391  
2SC3494

(X05-3290-10)(X05-3340-10)(A/4)

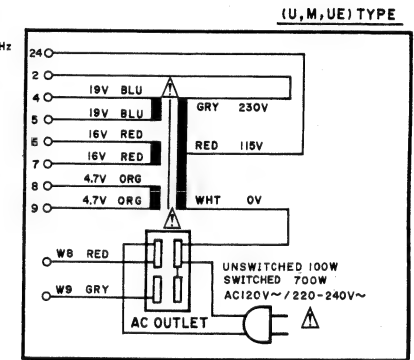
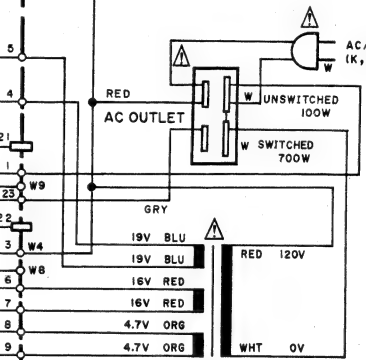
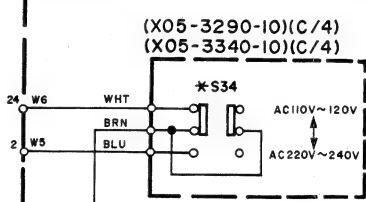
\*(X86-1040-10)



	Q41	E	C
12ch PRESET	2.7V	OV	
20ch PRESET	0.6V	OV	



	TUNER UNIT	FRONT-END
JAPAN MADE	X05-3291-10,-21	X86-1040-10
SINGAPORE MADE	X05-3340-10,-21	W02-0699-05



(X05-3290-10)(B/4)  
(X05-3340-10)(B/4)

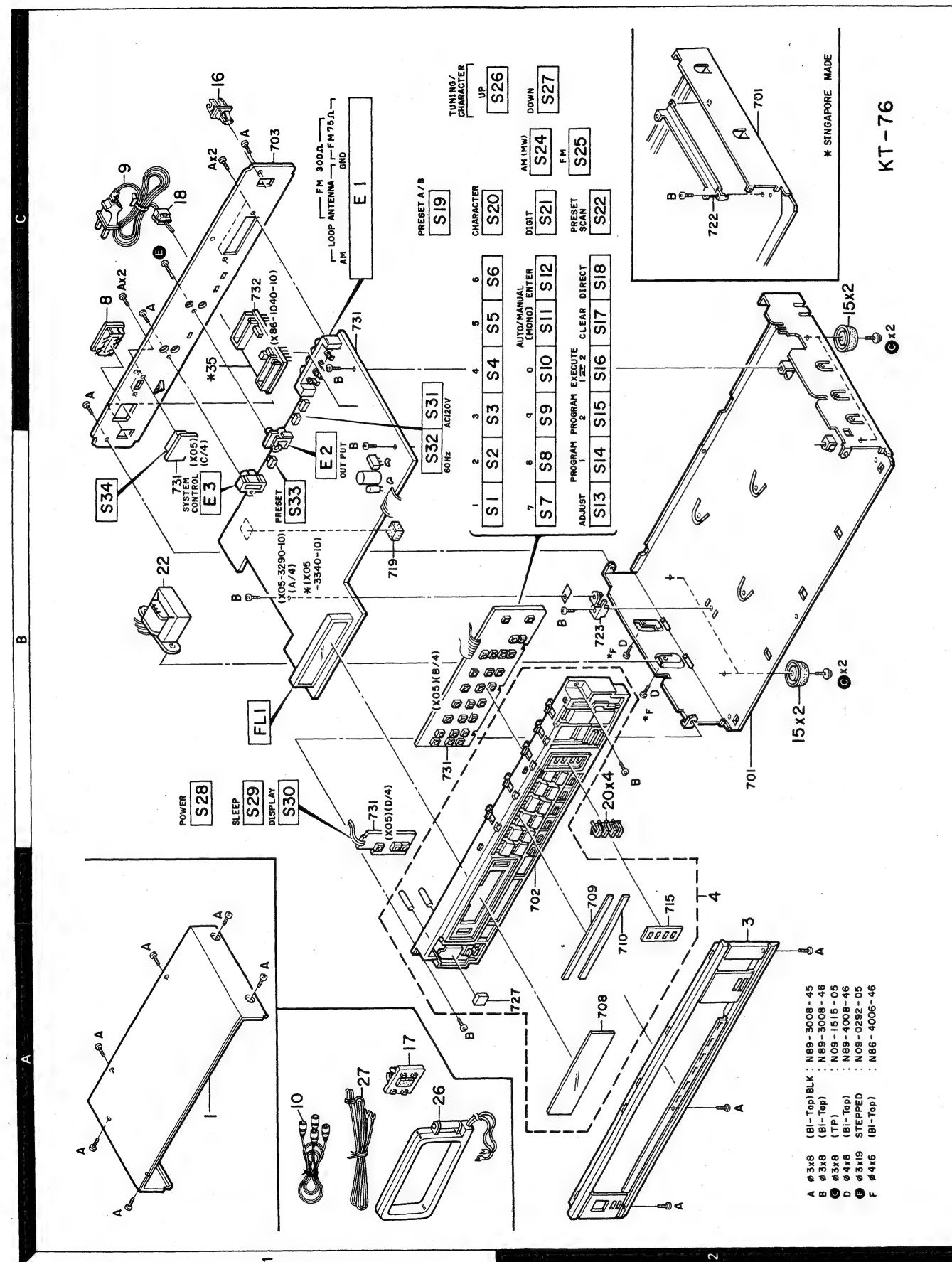
IC1 : LA1265  
IC2 : AN7470  
IC3 : CX7925B  
IC4 : CXP5016-196S

Q1 : 2SC1923(R,O)  
Q8,9 : 2SD1302(S,T)  
Q11,14,15,19,31,35 : 2SC945(A)(Q,P)  
Q12 : 2SC1845(F,E)  
Q16,32,33,36 : 2SA733(A)(Q,P)  
Q39~42,46 : 2SA999(E,F)  
Q44 : 2SD1266(Q,P)  
D1,4,6~8,10~15,19 : 1SS133 or 1SS176  
D3 : KV1236(ZZ)  
D21 : RD5.1ES(B) or HZS5.1N(B)  
D51 : 1B4841  
D52 : RD13ES(B2) or HZS13N(B2)  
D54~56,61 : DSM1A1  
D57 : RD5.1ES(B2) or HZS5.1N(B2)

KT-76 (K)

**KT-76**  
**KENWOOD**

## EXPLODED VIEW



## PARTS LIST

\* New Parts

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Refer to Parts List on page 29.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名/規格	Desti- nation 仕向	Re- marks 備考
KT-76						
1	1A		A01-1469-01	METALLIC CABINET		
3	2A	*	A20-5150-02	PANEL		
4	2A	*	A22-0664-03	SUB PANEL ASSY		
-			B46-0092-03	WARRANTY CARD	K	
-			B46-0094-03	WARRANTY CARD	UUE	
-			B46-0095-03	WARRANTY CARD	UUE	
-			B46-0121-03	WARRANTY CARD	P	
-		*	B50-6606-00	INSTRUCTION MANUAL (ENGLISH)		
-		*	B50-6607-00	INSTRUCTION MANUAL (FRENCH)	PM	
-		*	B50-6608-00	INSTRUCTION MANUAL (SPANISH)	M	
-		*	B50-6609-00	INSTRUCTION MANUAL (ARABIC)	M	
-			B58-0223-04	CAUTION CARD (PRE-SET 120V)	U	
-			B58-0269-04	CAUTION CARD	K	
-			B58-0513-04	CAUTION CARD (PRESET220-240)	UE	
-			B59-0092-00	SERVICE DIRECTORY	UUE	
8	1B		E03-0083-05	AC OUTLET		
9	1C		E30-0812-05	AC POWER CORD	UMUE	
9	1C		E30-0996-05	AC POWER CORD	KP	
10	1A		E30-0505-05	AUDIO CORD		
-		*	H01-7435-04	ITEM CARTON CASE		
-		*	H10-3446-02	POLYSTYRENE FOAMED FIXTURE		
-			H25-0223-04	PROTECTION BAG (750X350X0.03)		
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
15	2B, 2C		J02-0170-04	FOOT		
16	1C		J19-0626-12	ANTENNA HOLDER		
17	1A		J19-0875-03	ANTENNA HOLDER		
18	1C		J42-0083-05	POWER CORD BUSHING		
20	2B	*	K27-1721-04	KNOB (BUTTON) PRESET, DIGIT		
22	1B	*	L01-7601-05	POWER TRANSFORMER	KP	
22	1B	*	L01-7604-05	POWER TRANSFORMER	UMUE	
C	2B, 2C		N09-1515-05	TAPPING SCREW (Ø3X8)		
E	1C		N09-0292-05	STEPPED SCREW (Ø3X19)		
26	1A		T90-0104-25	LOOP ANTENNA		
27	1A		T90-0132-05	T TYPE ANTENNA		
Singapore made						
1	1A		A01-1484-02	METALLIC CABINET		
3	2A		A20-5150-02	PANEL		
4	2A		A22-0664-03	SUB PANEL ASSY		
-			B46-0092-03	WARRANTY CARD	K	
-			B46-0094-03	WARRANTY CARD	UUE	
-			B46-0095-03	WARRANTY CARD	UUE	
-			B46-0121-03	WARRANTY CARD	P	
-		*	B50-6746-00	INSTRUCTION MANUAL (ENGLISH)		
-		*	B50-6747-00	INSTRUCTION MANUAL (FRENCH)	PM	
-		*	B50-6748-00	INSTRUCTION MANUAL (SPANISH)	M	
-		*	B50-6749-00	INSTRUCTION MANUAL (ARABIC)	M	
-			B58-0223-04	CAUTION CARD (PRE-SET 120V)	U	
-			B58-0269-04	CAUTION CARD	K	
-			B58-0513-04	CAUTION CARD (PRESET220-240)	UE	

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-			B59-0092-00	SERVICE DIRECTORY	UUE	
8	1B		E03-0083-05	AC OUTLET		
9	1C		E30-0812-05	AC POWER CORD	UMUE	
9	1C		E30-0996-05	AC POWER CORD	KP	
10	1A		E30-0505-05	AUDIO CORD		
-		*	H01-7530-04	ITEM CARTON CASE		
-		*	H10-3302-12	POLYSTYRENE FOAMED FIXTURE		
-			H25-0223-04	PROTECTION BAG (750X350XD.03)		
-			H25-0232-04	PROTECTION BAG (235X350XD.03)		
15	2B,2C		J02-0161-04	FOOT		
16	1C		J19-0564-05	ANTENNA HOLDER		
17	1A		J19-0875-03	ANTENNA HOLDER		
18	1C		J42-0083-05	POWER CORD BUSHING		
20	2A		K27-1721-04	KN0B (BUTTON) PRESET,DIGIT		
22	1B	*	L01-7821-05	POWER TRANSFORMER	KP	
22	1B	*	L01-7824-05	POWER TRANSFORMER	UMUE	
C	2B,2C		N09-1515-05	TAPPING SCREW (Ø3X8)		
E	1C		N09-0292-05	STEPPED SCREW (Ø3X19)		
26	1A		T90-0104-25	LOOP ANTENNA		
27	1A		T90-0121-05	T TYPE ANTENNA		
<b>TUNER UNIT (X05-3290-10)</b>						
C1			C91-0769-05	CERAMIC	0.01UF	M
C7 ,8			CK45FF1H223Z	CERAMIC	0.022UF	Z
C11			C91-0769-05	CERAMIC	0.01UF	M
C12			C009FS1H391JY0	POLYSTY	390PF	J
C13 ,14			CK45FF1H223Z	CERAMIC	0.022UF	Z
C15			CE04KW1V100M	ELECTR0	10UF	35WV
C16			CC45FSL1H101J	CERAMIC	100PF	J
C17			CE04KW1H4R7M	ELECTR0	4.7UF	50WV
C18			CE04KW1H2R2M	ELECTR0	2.2UF	50WV
C19			CE04KW1H4R7M	ELECTR0	4.7UF	50WV
C20			CK45FF1H223Z	CERAMIC	0.022UF	Z
C22			CK45FF1H223Z	CERAMIC	0.022UF	Z
C23 ,24			CK45FF1H103Z	CERAMIC	0.010UF	Z
C25			CF92FV1H153J	MF	0.015UF	J
C26			CE04KW1V100M	ELECTR0	10UF	35WV
C27			C009FS1H471J	POLYSTY	470PF	J
C28			CE04KW1H2R2M	ELECTR0	2.2UF	50WV
C29			CE04KW1H3R3M	ELECTR0	3.3UF	50WV
C30			CF92FV1H473J	MF	0.047UF	J
C31			CK45FB1H561K	CERAMIC	560PF	K
C32			CE04KW1HR47M	ELECTR0	0.47UF	50WV
C35 ,36			CC45FSL1H151J	CERAMIC	150PF	J
C38 ,39			CE04KW1HR33M	ELECTR0	0.33UF	50WV
C40 ,41			CF92FV1H153J	MF	0.015UF	J
C40 ,41			CF92FV1H223J	MF	0.022UF	J
C42 ,43			CF92FV1H432J	MF	4300PF	J
C44			C91-0769-05	CERAMIC	0.01UF	M
C45			CE04KW0J101M	ELECTR0	100UF	6.3WV
C46			CK45FF1H103Z	CERAMIC	0.010UF	Z
C47			CE04KW1H010M	ELECTR0	1.0UF	50WV

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▲ indicates safety critical components.

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Ref. No. 参照番号	Address 位 置	New Parts 新	Parts No. 部 品 番 号	Description 部 品 名 / 規 格	Desti- nation 仕 向	Re- marks 備考
C48			CK45FF1H473Z	CERAMIC 0.047UF Z		
C49			CE04KW1H010M	ELECTR0 1.0UF 50WV		
C50			CE04KW1HR47M	ELECTR0 0.47UF 50WV		
C51			CK45FF1H103Z	CERAMIC 0.010UF Z		
C52			CE04KW1H010M	ELECTR0 1.0UF 50WV		
C53			CK45FF1H103Z	CERAMIC 0.010UF Z		
C101			CK45FF1H103Z	CERAMIC 0.010UF Z		
C102-104			CK45FB1H102K	CERAMIC 1000PF K		
C105			CC45FSL1H560J	CERAMIC 56PF J		
C106			CC45FSL1H270J	CERAMIC 27PF J		
C107			CE04KW1V100M	ELECTR0 10UF 35WV		
C108			CE04KW1HR47M	ELECTR0 0.47UF 50WV		
C111			CE04KW1V100M	ELECTR0 10UF 35WV		
C113			C91-0757-05	CERAMIC 0.001UF K		
C118,119			C91-0757-05	CERAMIC 0.001UF K		
C120,121			CC45FSL1H221J	CERAMIC 220PF J		
C122			CK45FF1H473Z	CERAMIC 0.047UF Z		
C123,124			CC45FCH1H330J	CERAMIC 33PF J		
C150			CE04KW1C470M	ELECTR0 47UF 16WV		
C151-153			CK45FF1H103Z	CERAMIC 0.010UF Z		
C154			CE04KW1V102M	ELECTR0 1000UF 35WV		
C155			CE04KW1C471M	ELECTR0 470UF 16WV		
C156			CE04KW1E221M	ELECTR0 220UF 25WV		
C157			CE04KW1C221M	ELECTR0 220UF 16WV		
C158			CE04KW1V100M	ELECTR0 10UF 35WV		
C159			CK45FF1H103Z	CERAMIC 0.010UF Z		
C160			CE04KW1V100M	ELECTR0 10UF 35WV		
C161			C91-0769-05	CERAMIC 0.01UF M		
C163,164			CK45FF1H103Z	CERAMIC 0.010UF Z		
C165,166			CE04KW1E102M	ELECTR0 1000UF 25WV		
C167			CE04KW0J102M	ELECTR0 1000UF 6.3WV		
C168			CE04KW0J222M	ELECTR0 2200UF 6.3WV		
C169			CE04KW1V100M	ELECTR0 10UF 35WV		
C171			C90-1400-05	NP-ELEC 10UF 50WV		
C172			CK45F1H103Z	CERAMIC 0.010UF Z		
TC2			C05-0303-05	CERAMIC TRIMMER CAPACIT0R(20PF		
TC4			C05-0303-05	CERAMIC TRIMMER CAPACIT0R(20PF		
E1	1C		E20-0449-05	SCREW TERMINAL BOARD(4P)ANT		
E2	1B		E13-0217-05	PHONE JACK (2P) OUTPUT		
E3	1B		E11-0165-05	MINIATURE PHONE JACK(SYS CONT)		
CF1 ,2			L72-0140-05	CERAMIC FILTER		
CF3			L72-0099-05	CERAMIC FILTER		
CF4			L72-0096-05	CERAMIC FILTER		
L3			L31-0509-05	MW-RF COIL		
L5			L32-0277-15	MW OSCILLATING COIL		
L7			L40-1021-14	SMALL FIXED INDUCT0R(1.0MH,K)		
L8 ,9			L40-1092-14	SMALL FIXED INDUCT0R(1.0UH,M)		
L12			L30-0362-05	AM IFT		
L13		*	L30-0439-15	FM IFT		
X1			L77-0573-05	CRYSTAL RESONATOR(4.5MHZ)		
X2		*	L77-1118-05	CRYSTAL RESONATOR		
R153			RS14DB3A101J	FL-PROOF RS 100 J 1W		
R154			RD14GB2E101J	FL-PROOF RD 100 J 1/4W		

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R155-157 R161 R164 R165,166 VR1			RD14AB2E101J R92-0173-05 RD14AB2E330J RS14DB3D122J R12-3098-05	FL-PROOF RD 100 J 1/4W RC 2.2M M 1/2W FL-PROOF RD 33 J 1/4W FL-PROOF RS 1.2K J 2W TRIMMING P0T. (33K) FM TUNE	KP	
VR2 VR4			R12-1069-05 R12-3096-05	TRIMMING P0T. (4.7K) VCO TRIMMING P0T. (10K) AM TUNE		
△ K1 S1 -22 S24 -30 S31 -33 S33	2B,2C 1B,2C 1B,1C 1B		S51-1036-05 S40-1064-05 S40-1064-05 S31-2075-05 S31-2075-05	MAGNETIC RELAY PUSH SWITCH (1-0,ENTER,PR0G) PUSH SWITCH (FM,TUN,POWER) SLIDE SWITCH(60HZ,AC10V) SLIDE SWITCH(PRESET)	UMUE KP	
△ S34	1B		S31-2115-05	SLIDE SWITCH	UMUE	
D1 D1 D3 D4 -8 D4 -8			1SS133 1SS176 KV1236(Z2) 1SS133 1SS176	DIODE DIODE VARIABLE CAPACITANCE DIODE DIODE DIODE		
D10 -14 D10 -14 D10 -15 D10 -15 D19 ,20			1SS133 1SS176 1SS133 1SS176 1SS133	DIODE DIODE DIODE DIODE DIODE	KP KP UMUE UMUE	
D19 ,20 D21 D21 D22 -29 D22 -29			1SS176 HZS5.1N(B) RD5.1ES(B) 1SS133 1SS176	DIODE ZENER DIODE ZENER DIODE DIODE DIODE		
D32 D32 D51 D52 D52			1SS133 1SS176 1B4B41 HZS13N(B2) RD13ES(B2)	DIODE DIODE DIODE ZENER DIODE ZENER DIODE		
D54 -56 D57 D57 D59 ,60 D59 ,60			DSM1A1 HZS5.1N(B2) RD5.1ES(B2) 1SS133 1SS176	DIODE ZENER DIODE ZENER DIODE DIODE DIODE		
D61 FL1 IC1 IC2 IC3	1B	*	DSM1A1 FIP12PM7 LA1265 AN7470 CX7925B	DIODE FLUORESCENT INDICATOR TUBE IC(FM/AM TUNER) IC(FM MPX) IC(FREQUENCY SYNTHESIZER PLL)		
IC4 Q1 Q8 ,9 Q11 Q11 -15		*	CXP5016-196S 2SC1923(R,0) 2SD1302(S,T) 2SC945(A)(Q,P) 2SC1740S(Q,R)	IC(MICROPROCESSOR) TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q12 Q14 ,15 Q16 Q16 Q19			2SC1845(F,E) 2SC945(A)(Q,P) 2SA733(A)(Q,P) 2SA933S(Q,R) 2SC1740S(Q,R)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		

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C48			CK45FF1H473Z	CERAMIC 0.047UF Z		
C49			CE04LW1H010M	ELECTR0 1.0UF 50WV		
C50			CE04LW1HR47M	ELECTR0 0.47UF 50WV		
C51			CK45FF1H103Z	CERAMIC 0.010UF Z		
C52			CE04LW1H010M	ELECTR0 1.0UF 50WV		
C53			CK45FF1H103Z	CERAMIC 0.010UF Z		
C101			CK45FF1H103Z	CERAMIC 0.010UF Z		
C102-104			CK45FB1H102K	CERAMIC 1000PF K		
C105			CC45FSL1H560J	CERAMIC 56PF J		
C106			CC45FSL1H270J	CERAMIC 27PF J		
C107			CE04LW1V100M	ELECTR0 10UF 35WV		
C108			CE04LW1HR47M	ELECTR0 0.47UF 50WV		
C111			CE04LW1V100M	ELECTR0 10UF 35WV		
C113			C91-0757-05	CERAMIC 0.001UF K		
C118,119			C91-0757-05	CERAMIC 0.001UF K		
C120,121			CC45FSL1H221J	CERAMIC 220PF J		
C122			CK45FF1H473Z	CERAMIC 0.047UF Z		
C123,124			CC45FCH1H330J	CERAMIC 33PF J		
C150			CE04LW1C470M	ELECTR0 47UF 16WV		
C151-153			CK45FF1H103Z	CERAMIC 0.010UF Z		
C154		*	CE04EW1V102M	ELECTR0 1000UF 35WV		
C155		*	CE04EW1C471M	ELECTR0 470UF 16WV		
C156		*	CE04EW1E221M	ELECTR0 220UF 25WV		
C157			CE04LW1C221M	ELECTR0 220UF 16WV		
C158			CE04LW1V100M	ELECTR0 10UF 35WV		
C159			CK45FF1H103Z	CERAMIC 0.010UF Z		
C160			CE04LW1V100M	ELECTR0 10UF 35WV		
C161			C91-0769-05	CERAMIC 0.01UF M		
C163,164			CK45FF1H103Z	CERAMIC 0.010UF Z		
C165,166		*	CE04EW1E102M	ELECTR0 1000UF 25WV		
C167		*	CE04EW0J102M	ELECTR0 1000UF 6.3WV		
C168		*	CE04EW0J222M	ELECTR0 2200UF 6.3WV		
C169			CE04LW1V100M	ELECTR0 10UF 35WV		
C171			C90-1400-05	NP-ELEC 10UF 50WV		
C172			CK45F1H103Z	CERAMIC 0.010UF Z		
TC2			C05-0303-05	CERAMIC TRIMMER CAPACITOR(20PF		
TC4			C05-0303-05	CERAMIC TRIMMER CAPACITOR(20PF		
E1	1C		E20-0449-05	SCREW TERMINAL BOARD(4P)ANT		
E2	1B		E13-0217-05	PHONE JACK (2P) OUTPUT		
E3	1B		E11-0165-05	MINIATURE PHONE JACK(SYS CONT)		
CF1 ,2			L72-0140-05	CERAMIC FILTER		
CF3			L72-0099-05	CERAMIC FILTER		
CF4			L72-0096-05	CERAMIC FILTER		
L3			L31-0509-05	MW-RF COIL		
L5			L32-0277-15	MW OSCILLATING COIL		
L7			L40-1021-14	SMALL FIXED INDUCTOR(1.0MH,K)		
L8 ,9			L40-1092-14	SMALL FIXED INDUCTOR(1.0UH,M)		
L12			L30-0362-05	AM IFT		
L13			L30-0439-15	FM IFT		
X1			L77-0573-05	CRYSTAL RESONATOR(4.5MHZ)		
X2			L77-1118-05	CRYSTAL RESONATOR		
R153			RS14KB3A101J	FL-PROOF RS 100 J 1W		
R154-157			RD14GB2E101J	FL-PROOF RD 100 J 1/4W		

E: Scandinavia & Europe H: Audio Club K: USA P: Canada

S: South Africa T: England U: PX(Far East, Hawaii)

UE: AAFES(Europe) X: Australia M: Other Areas

△ indicates safety critical components.

✕ New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕 向	Re- marks 備考
Q31			2SC1740S(Q,R)	TRANSISTOR		
Q31			2SC945(A)(Q,P)	TRANSISTOR		
Q32 ,33			2SA733(A)(Q,P)	TRANSISTOR		
Q32 ,33			2SA933S(Q,R)	TRANSISTOR		
Q34			2SA999(E,F)	TRANSISTOR		
Q35			2SC1740S(Q,R)	TRANSISTOR		
Q35			2SC945(A)(Q,P)	TRANSISTOR		
Q36			2SA733(A)(Q,P)	TRANSISTOR		
Q36			2SA933S(Q,R)	TRANSISTOR		
Q37 ,38			2SC1740S(Q,R)	TRANSISTOR		
Q37 ,38			2SC945(A)(Q,P)	TRANSISTOR		
Q39 -41			2SA733(A)(Q,P)	TRANSISTOR	KP	
Q39 -41			2SA933S(Q,R)	TRANSISTOR	KP	
Q39 -42			2SA733(A)(Q,P)	TRANSISTOR	UMUE	
Q39 -42			2SA933S(Q,R)	TRANSISTOR	UMUE	
Q43			2SC1740S(Q,R)	TRANSISTOR		
Q43			2SC945(A)(Q,P)	TRANSISTOR		
Q44			2SD1266(Q,P)	TRANSISTOR		
Q45			2SC1740S(Q,R)	TRANSISTOR		
Q45			2SC945(A)(Q,P)	TRANSISTOR		
Q46			2SA733(A)(Q,P)	TRANSISTOR		
Q46			2SA933S(Q,R)	TRANSISTOR		
35	1C		W02-0699-05	FM FRONT-END ASSY		
<b>FRONT END UNIT (X86-1040-10)</b>						
C1		*	CC41FSL1H060D	CYLND CHIP C 6.0PF	D	
C2			C93-0012-05	CYLND CHIP C 0.01UF	M	
C3		*	CC41FSL1H100D	CYLND CHIP C 10PF	D	
C4			C93-0012-05	CYLND CHIP C 0.01UF	M	
C5			CK41FB1H221K	CYLND CHIP C 220PF	K	
C6		*	CC41FSL1H070D	CYLND CHIP C 7.0PF	D	
C8			CC41FSL1H020C	CYLND CHIP C 2.0PF	C	
C9			CK41FB1H221K	CYLND CHIP C 220PF	K	
C10			C93-0012-05	CYLND CHIP C 0.01UF	M	
C11		*	CC41FSL1H080D	CYLND CHIP C 8.0PF	D	
C12		*	CC41FSL1H010C	CYLND CHIP C 1.0PF	C	
C14			C93-0012-05	CYLND CHIP C 0.01UF	M	
C16		*	CC41FSL1H080D	CYLND CHIP C 8.0PF	D	
C17			CC41FSL1H330J	CYLND CHIP C 33PF	J	
C18		*	CC41FSL1H150J	CYLND CHIP C 15PF	J	
C19		*	CC41FSL1H010C	CYLND CHIP C 1.0PF	C	
C20			CK41FY1E102M	CYLND CHIP C 1000PF	M	
C21		*	CC41FSL1H470J	CYLND CHIP C 47PF	J	
TC1			C05-0302-05	CERAMIC TRIMMER CAPACITOR(11PF)		
L1		*	L31-0551-05	FM-RF COIL		
L2		*	L31-0552-05	FM-RF COIL		
L3		*	L31-0553-05	FM-RF COIL		
L4			L40-1092-16	SMALL FIXED INDUCTOR(1UH,M)		
L7			L32-0318-05	FM OSCILLATING COIL		
T1		*	L30-0427-15	FM IFT		
-			R92-0338-05	CYLND CHIP R 0 OHM		
-			R92-0350-05	JUMPER WIRE (RESISTOR TYPE)		
R1 ,2			RD41FB2B473J	CYLND CHIP R 47K	J 1/BW	
R3		*	RD41FB2B470J	CYLND CHIP R 47	J 1/BW	

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⚠ indicates safety critical components.

## SPECIFICATIONS

### FM Tuner Section

Tuning frequency range .....	87.5 MHz – 108 MHz
Antenna impedance .....	300 ohms balanced 75 ohms unbalanced

#### Sensitivity

Usable sensitivity (IHF): MONO .....	0.95 $\mu$ V (10.8 dBf)
50 dB quieting sensitivity (IHF)	
Mono: .....	3 $\mu$ V (14.7 dBf)
Stereo: .....	49 $\mu$ V (39.0 dBf)

#### Total harmonic distortion

Mono: (75 kHz Dev.) 100 Hz .....	0.4 %
1,000 Hz .....	0.3 %
50 Hz – 10,000 Hz .....	0.5 %
Stereo: (75 kHz Dev.) 100 Hz .....	0.5 %
1,000 Hz .....	0.3 %
50 Hz – 10,000 Hz .....	0.7 %

#### Signal-to-Noise ratio

Mono: (75 kHz Dev.) 65 dBf input...	76 dB
85 dBf input...	78 dB
Stereo: (75 kHz Dev.) 65 dBf input...	73 dB
85 dBf input .....	75 dB

#### Capture ratio .....

1.2 dB
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#### Alternate channel selectivity

IHF: $\pm$ 400 kHz .....	50 dB
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#### Stereo separation

1,000 Hz .....	40 dB
50 Hz – 10,000 Hz .....	35 dB

#### Frequency response

30 Hz – 15,000 Hz .....	+0.5 dB, -2 dB
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#### Image rejection ratio (98 MHz) .....

50 dB
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#### IF rejection ratio (98 MHz) .....

95 dB
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#### Spurious rejection ratio (98 MHz) .....

80 dB
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AM suppression ratio .....	70 dB
Sub-carrier suppression ratio .....	37 dB
Output level/impedance	
FM: 1,000 Hz, 100 % Dev. (fixed) ....	0.6 V/3.3 kohms

### AM Tuner Section

Tuning frequency range .....	531 kHz – 1,602 kHz (9 kHz step) 530 kHz – 1,610 kHz (10 kHz step)
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#### Usable sensitivity .....

14 $\mu$ V, 400 $\mu$ V/m
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#### Signal-to-Noise ratio

(30 % Mod; 1 mV input .....	50 dB
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#### Total harmonic distortion .....

0.5 %
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#### Image rejection ratio .....

40 dB
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#### IF rejection ratio .....

50 dB
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#### Selectivity (IHF) .....

25 dB
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#### Output level/impedance

(400 Hz, 30 % mod) .....	0.18V/3.3 kohms
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### General

Power requirements .....	120 V, 60 Hz (U.S.A. and Canada models) 110 – 120 V/220 – 240 V, 50/60 Hz (Switchable)
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#### Power consumption .....

12 W
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#### Dimensions .....

W: 420 mm (16-9/16")
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#### H: 74 mm (2-15/16")

#### D: 267 mm (10-1/2")

#### Weight (Net) .....

2.8 kg (6.2 lb)
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### Note:

We follow a policy of continuous advancements in development. For this reason specifications may be changed without notice.